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Laboratory Evidence of Human Viral and Selected Non-viral Infections in Canada

1989 to 1996

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LABORATORY EVIDENCE OF HUMAN VIRAL AND SELECTED NON-VIRAL INFECTIONS IN CANADA

1989-1996

Laboratory Centre for Disease Control
Health Protection Branch
Health Canada

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Introduction

In support of the virus surveillance program of the World Health Organization (WHO), the Laboratory Centre for Disease Control (LCDC), Health Canada, began a computer database in 1980 to collect data from contributing provincial laboratories on positive laboratory diagnoses of specific viral and selected non-viral agents[1]. After cancellation of the WHO program in 1988, a simplified Canadian Virus Reporting System (CVR) was established at the beginning of 1989, and contributing laboratories were asked to submit only listings indicating the total number of specimens tested each month together with the total number of monthly positive findings for each agent, without clinical or patient information[2].

Over 90 agents were reported in the CVR system. Positive findings included isolation of agents from specimens; detection of agents or their components, such as antigens, in specimens; and evidence of specific immune responses, either the increase (generally fourfold) of antibody level or the presence of antibodies (usually specific IgM) indicative of current infections.

For each month and quarter, a national report was prepared based on data from each contributing laboratory; this was sent back to those laboratories and to interested epidemiologists. For each year, a summary of the findings from the laboratory surveillance system was reported in the Canada Diseases Weekly Report[2,3] or the Canada Communicable Disease Report[4-7].

The database management was set up and maintained with help from the Division of Biometrics, LCDC, Health Canada.

In 1989, 30 laboratories across Canada participated in the CVR system, and by 1996 the number had increased to 42. In total, 45 laboratories participated in the system during the 8 years. The cooperation of the directors and staff of the contributing laboratories (see Appendix) who collected and submitted data to the CVR database is greatly appreciated.

General Information

Over the 8 years from 1989 to 1996, an increasing number of positive findings of infection were reported, presumably due to a true increase in incidence, more participating laboratories, and probably also the increasing awareness of certain infections and greater availability of some laboratory assays. The total number of positive findings reported each year (1) is shown in Table 1.

Comparison of (1) with (5) showed that by 1990 over 85% of the positive reports were submitted with the number of specimens tested, and by 1993 approximately 95% were reported together with the number of specimens (8). The rates of positivity among specimens tested was about 5% (6).

Table 1. Annual Number of Positive Findings Reported Through CVR

Year	Total No. of Positives (1)	% (2)	No. of Labs Reporting (3)	Total No. of Specimens Tested (4)	No. of Positives from (4) (5)	(5)/(4) (6)	Increase in (4) (7)	(5)/(1) (8)
1989*	50,513	100	30	575,981	34,127	5.93%	1.00	67.56%
1990	61,468	122	30	838,399	53,610	6.39%	1.46	87.22%
1991	73,464	145	32	1,029,189	63,416	6.16%	1.79	86.32%
1992	68,354	135	33	1,058,862	62,491	5.90%	1.84	91.42%
1993	66,447	132	37	1,398,001	62,919	4.50%	2.43	94.69%
1994	65,925	131	37	1,307,141	62,521	4.78%	2.27	94.84%
1995	73,180	145	39	1,331,607	69,127	5.19%	2.31	94.46%
1996	83,105	165	42	1,544,047	79,021	5.12%	2.68	95.09%
TOTAL	542,456			9,083,227	487,232	5.36%		

* 1989 is the reference year for columns (2) and (7).

A 65% increase is noticed in 1996, as compared with 1989 (2), which may serve as a reference when temporal comparisons are made. Data on the total number of specimens tested were collected and intended for reference purpose, although some laboratories did not report these data, especially in the early years. Nevertheless, the total numbers of specimens tested (4) and the number of positive findings (5) submitted with these totals were extracted from the database.

Initially, reports were received from nine provinces, since those from Prince Edward Island (P.E.I.) were combined with the Nova Scotia reports. From 1993, positive diagnoses from P.E.I. laboratories were reported separately. The annual number of total positive reports from each province is shown in Table 2. These numbers may serve as references for comparison of infection levels of individual agents over different regions and time.

Table 2. Total Number and Proportion of Positive Reports From Each Province, 1989-1996

	Province										
Year and % of total	BC	Alta.	Sask.	Man.	Ont.	PQ	NB	NS	PEI	Nfld.	Total
1989	8,469	5,964	6,461	224	19,755	3,788	1,100	2,800	0	1,952	50,513
(% of total)	(16.77)	(11.81)	(12.79)	(0.44)	(39.11)	(7.50)	(2.18)	(5.54)	(0.00)	(3.86)	(100.00)
1990	8,986	6,518	5,823	7,815	25,422	3,379	878	1,932	0	715	61,468
(% of total)	(14.62)	(10.60)	(9.47)	(12.71)	(41.36)	(5.50)	(1.43)	(3.14)	(0.00)	(1.16)	(100.00)
1991	10,226	5,058	6,962	8,862	32,657	5,574	1,128	1,984	0	1,013	73,464
(% of total)	(13.92)	(6.89)	(9.48)	(12.06)	(44.45)	(7.59)	(1.54)	(2.70)	(0.00)	(1.38)	(100.00)
1992	12,379	4,997	6,454	7,507	28,372	4,336	1,352	2,153	0	804	68,354
(% of total)	(18.11)	(7.31)	(9.44)	(10.98)	(41.51)	(6.34)	(1.98)	(3.15)	(0.00)	(1.18)	(100.00)
1993	11,882	7,054	5,697	7,943	24,879	3,809	1,854	2,136	308	885	66,447
(% of total)	(17.88)	(10.62)	(8.57)	(11.95)	(37.44)	(5.73)	(2.79)	(3.21)	(0.46)	(1.33)	(100.00)
1994	13,682	2,889	6,320	7,083	25,969	5,105	1,776	1,843	555	703	65,925
(% of total)	(20.75)	(4.38)	(9.59)	(10.74)	(39.39)	(7.74)	(2.69)	(2.80)	(0.84)	(1.07)	(100.00)
1995	14,860	4,824	6,121	7,756	29,580	4,425	1,672	2,356	813	773	73,180
(% of total)	(20.31)	(6.59)	(8.36)	(10.60)	(40.42)	(6.05)	(2.28)	(3.22)	(1.11)	(1.06)	(100.00)
1996	16,804	8,551	6,231	6,979	33,461	4,785	2,220	2,738	703	633	83,105
(% of total)	(20.22)	(10.29)	(7.50)	(8.40)	(40.26)	(5.76)	(2.67)	(3.29)	(0.85)	(0.76)	(100.00)

Temporal Patterns of Laboratory Reports of Viral and Selected Non-viral Infections in Canada

Tables 3 to 10 show the total number of reports of individual agents each month from 1989 to 1996. Herpesviruses as a group showed similar infection levels each year, whereas respiratory viral, *Mycoplasma pneumoniae* and enteroviral infections fluctuated annually. However, reported numbers of the sexually transmitted *Chlamydia trachomatis* have been decreasing since 1991, presumably reflecting the effect of the campaign against AIDS. Among respiratory infections, respiratory syncytial viral (RSV) infection occurred mostly between November and May, whereas parainfluenza viruses, adenoviruses and *Mycoplasma pneumoniae* showed fewer seasonal differences. The epidemic season of measles shifted from the spring in 1989 toward the summer in 1995 and 1996. Among enterovirus infections, one or more of Coxsackie type A9, B1, B2, B4, B5, and enterovirus type 4, 6, 9, 11, and 30 predominated in the epidemic season of different years.

The five most frequently diagnosed agents each year are shown in Table 11. Noteworthy are the decreasing reports of *C. trachomatis* and HIV. Another significant shift is the increase in reports of hepatitis C virus (HCV), to 19,518 in 1996. This may reflect a rise in the frequency of HCV infections, greater awareness of the infection, increasing effort in its detection as well as the availability of testing methods. Laboratory-diagnosed RSV infection also increased, from 2,808 in 1989 to 4,919 in 1996, accounting for 5.92% of total infections in that year.

Table 3. Laboratory Evidence of Human Viral Infections by Month, Jan-1989 to Dec-1989

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	114	117	119	90	111	111	112	152	148	136	169	146	1625
Adenovirus Type 01	5	5	5	0	1	2	0	0	0	3	0	3	24
Adenovirus Type 02	6	3	14	1	4	2	3	2	4	3	3	9	54
Adenovirus Type 03	8	4	4	2	0	6	4	3	6	7	2	2	48
Adenovirus Type 04	0	1	1	0	0	0	0	0	1	0	0	0	3
Adenovirus Type 05	0	1	5	1	1	0	4	2	3	4	4	1	26
Adenovirus Type 06	0	0	1	0	0	0	0	0	0	1	0	0	2
Adenovirus Type 07	0	0	0	0	0	1	0	0	0	0	0	0	1
Adenovirus Type 08	0	0	0	0	0	0	0	0	0	2	0	0	2
Adenovirus Type 12	0	0	0	0	0	0	0	0	0	1	0	0	1
Astrovirus	7	4	4	0	2	1	0	0	0	0	1	0	19
C. trachomatis	1100	1119	1207	1215	950	1010	941	1111	1434	1048	1318	874	13327
Calicivirus	3	2	2	0	1	3	3	0	3	5	4	14	40
Chlamydia psittaci	3	0	4	4	4	0	0	2	6	2	7	0	32
Chlamydiae N.T.	106	84	2	5	94	6	102	15	3	5	18	150	590
Coronavirus	0	0	0	0	2	0	0	0	0	0	0	0	2
Cowpox Virus	0	0	1	6	4	1	0	1	0	1	7	3	24
Coxiella burnetii	0	1	0	0	0	2	4	4	1	2	0	0	14
Coxsackie A N.T.	0	0	0	0	0	1	2	1	2	10	1	2	19
Coxsackie B N.T.	0	0	0	0	0	0	0	0	0	1	0	0	1
Coxsackie Type A09	0	0	0	0	1	1	1	0	1	4	1	1	10
Coxsackie Type A16	0	1	0	0	0	0	0	1	1	1	0	0	4
Coxsackie Type B01	1	0	0	0	1	0	0	1	0	0	0	0	3
Coxsackie Type B02	0	1	0	0	0	0	0	0	0	0	1	0	2
Coxsackie Type B03	0	1	0	1	0	0	2	3	3	0	0	0	10
Coxsackie Type B04	0	0	0	0	0	0	3	5	2	1	1	2	14
Coxsackie Type B05	3	0	0	0	2	3	6	13	10	18	6	8	69
Coxsackie Type B06	0	0	0	0	0	0	0	1	1	0	0	2	4
Cytomegalovirus	136	162	177	189	231	170	164	199	181	199	178	201	2187
Echovirus N.T.	0	0	3	0	0	1	0	8	0	0	0	1	13
Echovirus Type 01	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 03	3	0	0	1	0	0	0	1	0	0	0	0	5
Echovirus Type 04	0	0	0	0	0	0	0	0	0	0	0	1	1
Echovirus Type 05	0	0	2	8	4	2	6	9	5	1	0	0	37
Echovirus Type 06	0	0	0	0	0	3	4	5	20	39	6	14	91
Echovirus Type 07	0	0	0	0	0	0	0	0	2	1	0	0	3
Echovirus Type 09	0	0	0	0	0	0	3	2	16	10	15	6	52
Echovirus Type 11	0	0	0	0	3	0	1	10	11	4	0	4	33
Echovirus Type 14	0	2	1	0	0	0	0	0	0	0	0	0	3
Echovirus Type 17	0	0	0	0	0	0	0	0	0	0	1	0	1
Echovirus Type 18	0	0	0	2	0	0	0	1	3	0	0	0	6
Echovirus Type 19	1	0	0	0	0	0	2	1	0	0	0	0	4
Echovirus Type 20	0	0	0	0	0	0	0	0	0	0	2	0	2
Echovirus Type 21	0	0	0	0	0	0	1	1	0	1	0	0	3
Echovirus Type 22	2	3	5	0	2	1	1	1	3	2	4	2	26
Echovirus Type 25	2	1	0	0	0	0	0	0	0	0	0	0	3
Echovirus Type 30	0	0	0	0	0	0	0	0	2	0	0	0	2
Echovirus Type 31	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 32	0	1	0	0	0	0	0	0	0	0	0	0	1
Entero N.T.	80	72	62	36	39	51	90	143	198	131	127	75	1104
Epstein-Barr Virus	189	163	194	224	228	222	201	235	180	206	213	181	2436
Hepatitis A Virus	91	70	56	35	65	54	42	36	107	80	73	90	799
Hepatitis B Virus	224	229	146	144	166	196	131	170	346	[illegible]	314	326	2627
Hepatitis Delta-HDV	0	0	0	2	0	0	0	0	0	0	0	0	2
Herpes Group	204	116	147	133	125	164	128	171	134	268	175	162	1927
Herpes Simplex N.T.	332	332	334	384	396	426	371	375	361	458	401	368	4538
Herpes Simplex Type 1	328	250	172	161	213	175	382	343	215	196	273	349	3057
Herpes Simplex Type 2	356	312	232	178	205	165	420	394	367	237	365	364	3595
HTLV - I	0	0	0	0	0	0	0	1	0	1	0	0	2
HTLV III/LAV = HIV - 1	80	130	110	73	86	97	92	300	320	134	330	388	2140
Influenza A Virus N.T.	236	146	59	80	57	22	4	4	1	3	63	221	896
Influenza B Virus	4	8	49	16	20	4	3	2	0	0	10	8	124
Measles	30	23	63	166	287	106	85	40	9	0	3	3	815
Molluscum contagiosum	1	0	1	0	1	3	2	1	0	0	1	0	10
Mumps	5	3	4	1	6	4	3	8	7	2	6	2	51
Mycoplasma pneumoniae	34	23	26	22	14	19	23	34	45	46	94	68	448
Norwalk Agent	4	22	1	5	0	4	0	0	1	2	9	12	60
Papovavirus Group	1	1	1	0	1	0	0	3	1	2	0	1	11
Parainfluenza Virus N.T.	18	8	2	6	16	11	18	9	1	3	25	1	118
Parainfluenza Virus Type 1	1	1	5	3	6	4	11	8	13	46	57	32	187
Parainfluenza Virus Type 2	1	1	1	0	1	5	3	12	9	17	32	23	105
Parainfluenza Virus Type 3	35	46	43	57	61	55	13	7	29	11	32	23	412
Parvovirus B19	6	10	32	3	5	17	11	19	6	1	2	2	114
Polio - Vac. Strain	0	0	0	0	0	2	0	1	0	0	0	0	3
Polio N.T.	0	0	2	6	0	3	2	0	0	3	3	0	19
Polio Type 1	2	3	6	3	2	0	1	2	0	3	6	5	33
Polio Type 2	7	1	6	6	7	5	0	2	5	0	1	4	44
Polio Type 3	1	3	10	6	8	4	1	3	3	1	1	4	45
Polio Vac. Type 2	0	0	0	0	0	0	0	2	0	0	0	0	2
Reovirus (All Types)	3	4	3	0	6	0	0	1	2	1	3	4	27
Respiratory Syncytial Virus	437	691	566	298	132	52	42	17	40	58	109	366	2808
Rhinovirus (All Types)	2	0	0	12	6	7	13	6	6	4	1	0	57
Rotavirus	287	419	555	373	273	113	61	17	13	30	82	166	2389
Rubella	50	84	29	144	121	86	59	9	16	5	8	8	619
Varicella-Zoster Virus	43	36	36	54	43	36	55	53	36	42	58	52	544
TOTALS	**4594**	**4720**	**4510**	**4156**	**4014**	**3439**	**3636**	**3983**	**4343**	**3738**	**4626**	**4764**	**50513**

Table 4. Laboratory Evidence of Human Viral Infections by Month, Jan-1990 to Dec-1990

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	146	153	179	114	120	110	89	76	89	119	112	132	1439
Adenovirus Type 01	2	3	7	3	2	0	0	1	4	2	2	3	29
Adenovirus Type 02	9	6	11	11	8	4	2	4	6	6	6	4	77
Adenovirus Type 03	9	1	14	2	4	1	0	0	7	4	6	13	61
Adenovirus Type 04	1	0	1	0	0	0	1	0	0	0	4	6	13
Adenovirus Type 05	6	8	6	5	11	8	0	0	6	6	3	12	71
Adenovirus Type 06	0	0	0	0	0	0	0	0	0	0	0	1	1
Adenovirus Type 07	0	1	0	1	0	0	0	0	1	0	0	0	3
Adenovirus Type 31	0	0	0	0	0	0	0	0	0	1	0	0	1
Adenovirus Type 40/41	0	0	0	2	0	0	3	0	3	3	2	2	15
Astrovirus	3	5	21	15	2	3	1	1	0	1	3	6	61
C. trachomatis	1342	1438	1650	1494	1306	1114	979	546	1565	1406	1392	1257	15489
Calicivirus	8	0	1	0	6	2	1	4	0	1	0	2	25
Chlamydia psittaci	0	0	0	0	0	3	4	2	2	2	1	4	18
Chlamydiae N.T.	8	5	12	90	12	225	8	9	0	120	59	3	551
Cowpox Virus	0	0	2	0	1	0	0	0	0	0	1	0	4
Coxiella burnetii	0	4	6	1	4	6	3	5	0	4	1	1	35
Coxsackie A N.T.	0	0	0	1	2	1	9	13	10	3	2	1	42
Coxsackie B N.T.	0	1	0	0	0	0	1	0	0	0	2	0	4
Coxsackie Type A02	0	0	0	0	0	0	0	0	0	0	1	0	1
Coxsackie Type A05	0	0	0	0	0	0	0	0	1	1	0	0	2
Coxsackie Type A09	0	1	0	0	1	0	0	3	19	18	5	3	50
Coxsackie Type A16	0	0	0	0	0	0	0	0	0	2	0	0	2
Coxsackie Type A22	0	0	0	0	0	0	0	0	0	0	0	1	1
Coxsackie Type B01	0	0	0	0	0	0	0	3	6	4	0	0	13
Coxsackie Type B02	0	1	0	0	0	0	2	1	4	2	0	6	16
Coxsackie Type B03	0	0	0	0	0	0	0	2	2	2	2	1	9
Coxsackie Type B04	1	1	0	0	0	0	0	1	1	2	1	0	7
Coxsackie Type B05	2	0	1	0	0	1	7	1	15	1	1	0	29
Coxsackie Type B06	0	0	1	0	0	0	0	0	1	0	0	0	2
Cytomegalovirus	246	249	320	256	214	193	126	114	199	281	216	132	2546
Echovirus N.T.	0	0	0	0	0	0	0	0	0	4	0	0	4
Echovirus Type 01	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 02	0	0	0	0	0	1	1	0	0	2	0	0	4
Echovirus Type 03	0	0	0	0	0	1	0	0	0	1	0	0	2
Echovirus Type 04	0	0	0	0	0	0	0	2	0	0	0	0	2
Echovirus Type 05	0	0	0	0	0	0	2	2	0	2	0	0	6
Echovirus Type 06	3	1	0	0	0	1	0	0	4	5	0	0	14
Echovirus Type 07	0	0	0	0	1	0	0	0	1	2	0	1	5
Echovirus Type 08	0	0	1	0	0	0	0	0	0	0	0	0	1
Echovirus Type 09	1	2	0	0	3	1	1	3	11	3	0	1	26
Echovirus Type 11	1	3	1	0	1	0	2	8	6	16	9	3	50
Echovirus Type 13	0	0	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 14	0	0	0	0	0	0	0	0	1	2	1	0	4
Echovirus Type 15	0	0	0	0	0	0	0	0	1	0	0	0	1
Echovirus Type 16	0	0	0	0	0	0	0	0	1	0	1	0	2
Echovirus Type 17	0	0	0	0	0	0	0	0	0	1	0	0	1
Echovirus Type 18	0	0	0	0	0	0	0	0	0	1	0	0	1
Echovirus Type 21	0	0	1	0	0	0	0	1	0	0	0	0	2
Echovirus Type 22	0	0	0	0	0	0	1	1	2	1	1	1	7
Echovirus Type 23	0	0	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 24	0	0	0	0	0	0	2	0	0	1	0	0	3
Echovirus Type 25	0	0	0	0	0	0	0	0	1	0	2	0	3
Echovirus Type 27	0	0	0	0	0	0	0	1	1	1	0	0	3
Echovirus Type 30	0	0	0	0	0	1	0	8	0	3	3	3	18
Echovirus Type 31	0	1	0	1	0	0	0	0	0	0	0	0	2
Entero N.T.	55	64	80	62	76	42	71	156	185	244	174	123	1332
Epstein-Barr Virus	181	203	275	179	184	151	252	154	148	337	283	147	2494
Hepatitis A Virus	103	110	120	100	81	88	62	61	97	87	112	80	1101
Hepatitis B Virus	342	370	446	360	379	308	271	276	193	224	179	230	3578
Hepatitis C Virus	43	84	51	41	56	47	78	89	108	140	181	36	964
Hepatitis Delta-HDV	0	0	0	0	0	0	0	0	0	2	1	0	3
Herpes Group	266	269	337	307	338	270	132	104	458	321	333	202	3337
Herpes Simplex N.T.	445	284	448	405	127	380	385	373	355	436	418	80	4136
Herpes Simplex Type 1	283	356	392	346	668	319	313	299	124	347	307	311	4065
Herpes Simplex Type 2	315	375	384	369	446	368	325	248	145	351	425	304	4055
HTLV - I	0	3	0	0	0	0	0	0	0	0	0	0	3
HTLV III/LAV = HIV - 1	424	456	413	515	527	299	459	346	77	530	391	53	4490
Influenza A Virus N.T	433	151	65	27	5	2	1	1	4	5	5	9	708
Influenza B Virus	1	10	40	22	24	2	0	0	0	1	30	89	219
Measles	2	10	5	11	38	12	6	2	3	101	46	35	271
Molluscum contagiosum	1	0	2	2	2	4	2	0	0	4	1	0	18
Mumps	3	3	0	2	3	1	7	2	1	3	5	2	32
Mycoplasma pneumoniae	67	71	93	111	104	114	77	61	125	223	226	189	1461
Norwalk Agent	39	40	34	17	11	6	10	4	3	8	6	17	195
Papovavirus Group	2	0	2	2	0	0	0	2	1	3	0	0	12
Parainfluenza Virus N.T.	18	8	0	11	23	22	19	8	11	1	13	19	151
Parainfluenza Virus Type 1	32	14	14	7	7	5	3	5	4	6	10	5	112
Parainfluenza Virus Type 2	15	8	6	6	4	2	1	0	0	0	2	0	44
Parainfluenza Virus Type 3	22	16	24	41	133	74	43	20	10	26	22	37	468
Parvovirus B19	1	0	4	4	1	7	8	0	7	0	2	18	52
Polio - Vac. Strain	0	0	0	0	2	0	0	0	0	0	0	0	2
Polio N.T.	0	3	6	5	18	22	0	5	3	3	8	3	76
Polio Type 1	0	2	8	9	2	4	0	1	5	2	1	2	36
Polio Type 2	2	0	6	4	9	10	4	6	4	5	3	1	54
Polio Type 3	0	0	4	8	2	9	2	6	4	5	3	1	44
Polio Vac. Type 3	0	0	0	1	0	0	0	0	0	0	0	0	1
Reovirus (All Types)	0	1	1	1	0	0	0	0	1	1	3	0	8
Respiratory Syncytial Virus	901	945	805	311	122	36	14	9	11	35	89	240	3518
Rhinovirus (All Types)	0	0	9	3	7	3	3	0	1	7	5	2	40
Rotavirus	391	464	695	596	267	106	20	14	10	9	45	126	2743
Rubella	6	12	10	19	55	16	7	11	2	6	10	8	162
Varicella-Zoster Virus	61	70	81	75	80	70	58	29	39	45	66	38	712
TOTALS	**6243**	**6286**	**7095**	**5975**	**5499**	**4475**	**3879**	**3103**	**4109**	**5554**	**5244**	**4006**	**61468**

Table 5. Laboratory Evidence of Human Viral Infections by Month, Jan-1991 to Dec-1991

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	165	101	48	139	135	119	120	135	112	117	120	131	1442
Adenovirus Type 01	7	4	8	8	6	2	4	4	4	5	0	6	58
Adenovirus Type 02	10	13	9	10	12	7	7	6	5	5	5	14	103
Adenovirus Type 03	12	7	1	3	4	4	2	2	1	8	2	10	56
Adenovirus Type 04	3	1	2	5	3	1	5	3	0	3	0	1	27
Adenovirus Type 05	4	1	2	8	2	1	1	3	2	2	1	1	28
Adenovirus Type 06	0	0	3	0	0	0	0	0	0	1	0	0	4
Adenovirus Type 07	0	0	0	0	0	0	0	0	1	0	0	1	2
Adenovirus Type 12	0	0	0	0	0	0	0	1	0	0	0	0	1
Adenovirus Type 40/41	1	12	1	1	9	4	17	9	10	4	0	0	68
Astrovirus	0	5	1	9	11	2	1	3	1	4	8	9	54
C. trachomatis	1465	1125	745	932	1484	1151	1012	1480	1571	1216	1182	1112	14475
Calicivirus	0	1	3	9	0	1	2	3	3	2	2	0	26
Chlamydia psittaci	7	6	0	4	1	3	6	0	5	2	2	0	36
Chlamydiae N.T.	108	334	59	344	257	266	352	13	18	272	266	194	2483
Contag. Pus. Derm (ORF)	0	0	0	0	1	0	0	0	0	0	0	0	1
Coronavirus	0	0	1	0	0	0	0	0	0	0	0	1	2
Cowpox Virus	0	0	0	0	1	0	0	0	0	0	0	0	1
Coxiella burnetii	1	4	3	2	2	3	3	3	1	1	3	2	28
Coxsackie A N.T.	1	0	0	0	1	0	0	0	0	0	0	0	2
Coxsackie B N.T.	4	1	0	0	1	0	2	3	1	2	1	0	15
Coxsackie Type A09	1	2	0	0	1	5	1	1	0	1	0	1	13
Coxsackie Type A16	0	0	0	0	0	0	0	0	0	0	0	2	2
Coxsackie Type B01	0	1	0	0	0	0	3	9	5	2	0	1	21
Coxsackie Type B02	5	0	0	4	0	14	38	39	14	14	5	0	133
Coxsackie Type B03	3	3	0	0	0	0	1	2	0	0	0	1	10
Coxsackie Type B04	0	0	0	0	1	6	30	35	14	8	1	8	103
Coxsackie Type B05	0	2	0	0	0	0	1	0	1	1	0	1	6
Coxsackie Type B06	1	0	0	0	0	0	0	1	0	0	0	0	2
Cytomegalovirus	216	207	133	206	242	195	228	164	188	211	253	234	2477
Echovirus N.T.	0	0	0	0	0	0	1	0	2	0	2	0	5
Echovirus Type 05	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 06	1	0	0	0	0	0	1	1	4	3	1	1	12
Echovirus Type 07	0	0	0	0	0	0	0	0	1	0	0	0	1
Echovirus Type 09	0	0	0	0	0	0	0	1	2	0	0	0	3
Echovirus Type 11	1	0	0	0	1	1	8	13	6	6	9	11	56
Echovirus Type 14	0	0	0	0	0	0	0	0	0	1	0	1	2
Echovirus Type 15	0	0	0	0	0	0	1	0	0	1	0	0	2
Echovirus Type 16	0	1	0	0	0	0	1	7	4	0	1	1	15
Echovirus Type 17	0	0	0	0	0	0	0	2	0	0	0	0	2
Echovirus Type 21	0	0	0	1	0	1	0	0	0	0	1	0	3
Echovirus Type 22	2	2	0	1	0	0	0	0	1	2	0	2	10
Echovirus Type 24	0	0	0	0	0	1	0	0	0	0	0	0	1
Echovirus Type 30	2	0	0	0	0	3	1	19	16	16	53	2	112
Echovirus Type 31	0	0	0	0	0	1	0	0	0	0	1	0	2
Entero N.T.	84	66	63	80	94	92	208	288	340	198	142	85	1740
Epstein-Barr Virus	337	267	44	380	390	357	307	248	211	239	287	239	3306
Hepatitis A Virus	112	106	34	103	118	118	135	177	178	230	157	124	1592
Hepatitis B Virus	278	605	250	341	371	341	340	309	282	419	440	276	4252
Hepatitis C Virus	344	326	207	366	349	398	387	381	280	286	504	211	4039
Hepatitis Delta-HDV	1	4	4	6	0	0	4	5	3	1	2	1	31
Herpes Group	348	259	289	559	527	361	612	325	194	199	179	169	4021
Herpes Simplex N.T.	425	340	49	137	175	408	81	343	401	379	448	410	3596
Herpes Simplex Type 1	449	290	204	393	435	410	376	399	444	428	419	484	4731
Herpes Simplex Type 2	426	301	224	574	505	454	434	471	448	439	495	426	5197
HTLV - I	0	0	0	0	0	0	0	0	0	0	1	0	1
HTLV III/LAV = HIV - 1	399	552	547	472	384	333	483	450	309	534	481	325	5269
Human Herpes Virus 6	0	0	1	0	0	1	1	0	2	2	1	1	9
Influenza A Virus N.T.	20	5	7	26	40	40	2	1	1	2	90	620	854
Influenza B Virus	275	312	114	106	29	3	0	0	1	0	3	2	845
Measles	104	139	230	428	393	208	112	32	63	75	75	81	1940
Molluscum contagiosum	1	1	1	0	0	2	1	0	2	5	2	1	16
Mumps	3	3	1	8	16	21	5	2	5	5	3	4	76
Mycoplasma pneumoniae	281	185	60	108	102	85	74	118	120	236	225	139	1733
Norwalk Agent	53	45	11	13	5	6	3	4	3	6	35	49	233
Papovavirus Group	1	0	0	1	3	2	2	1	2	2	1	3	18
Parainfluenza Virus N.T.	8	7	15	2	17	13	4	2	0	0	3	21	92
Parainfluenza Virus Type 1	14	19	6	13	10	1	11	9	15	69	62	47	276
Parainfluenza Virus Type 2	0	1	0	2	1	2	1	5	2	21	29	27	91
Parainfluenza Virus Type 3	59	57	44	114	113	67	39	29	15	14	9	10	570
Parvovirus B19	4	17	2	32	12	24	12	5	6	5	2	11	132
Polio - Vac. Strain	0	0	0	1	1	3	0	1	1	1	4	1	13
Polio N.T.	1	0	0	0	4	2	2	3	1	0	0	0	13
Polio Type 1	1	2	0	8	4	3	1	3	3	0	0	0	25
Polio Type 2	3	3	0	6	3	1	1	0	2	0	0	0	19
Polio Type 3	3	1	1	5	2	3	2	6	2	0	0	0	25
Polio Vac. Type 1	0	1	0	0	0	0	0	1	2	3	0	4	11
Polio Vac. Type 2	1	1	0	0	0	1	0	1	0	3	3	10	20
Polio Vac. Type 3	0	0	0	0	0	0	0	0	1	6	4	1	12
Reovirus (All Types)	2	2	1	2	2	0	0	2	1	2	2	3	19
Respiratory Syncytial Virus	395	591	393	528	228	87	39	13	34	43	138	737	3226
Rhinovirus (All Types)	1	0	10	15	21	8	11	6	15	12	9	7	115
Rotavirus	293	359	169	552	353	126	54	35	20	22	39	236	2258
Rubella	7	10	1	28	68	55	27	9	6	17	30	56	314
Varicella-Zoster Virus	56	58	35	75	86	68	80	95	50	62	80	83	828
TOTALS	**6810**	**6768**	**4036**	**7170**	**7036**	**5896**	**5700**	**5741**	**5458**	**5875**	**6323**	**6652**	**73464**

Table 6. Laboratory Evidence of Human Viral Infections by Month, Jan-1992 to Dec-1992

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	120	114	77	92	84	106	71	75	114	88	123	93	1157
Adenovirus Type 01	4	7	11	8	9	7	3	3	2	3	2	5	64
Adenovirus Type 02	0	4	10	4	7	7	7	5	3	2	4	2	55
Adenovirus Type 03	7	1	3	2	2	3	8	2	2	9	8	8	55
Adenovirus Type 04	3	1	4	4	2	2	1	1	1	0	1	0	20
Adenovirus Type 05	2	1	3	0	2	0	0	1	2	2	4	0	17
Adenovirus Type 07	3	0	0	0	2	0	0	0	0	1	2	0	8
Adenovirus Type 11	0	0	0	0	1	0	0	0	0	0	0	0	1
Adenovirus Type 40/41	1	2	2	0	0	1	0	0	0	0	0	0	6
Astrovirus	6	22	14	5	4	2	1	2	0	1	0	2	59
C. pneumoniae	0	0	0	1	0	1	1	0	0	0	0	0	3
C. trachomatis	898	1107	1027	937	910	1026	676	621	669	615	910	862	10258
Calicivirus	7	0	1	3	1	1	2	1	0	0	2	1	19
Chlamydia psittaci	1	1	0	2	1	1	0	0	2	5	2	1	16
Chlamydiae N.T.	235	224	229	231	197	217	177	183	186	191	181	200	2431
Coronavirus	1	0	0	0	0	0	3	0	0	0	0	1	5
Coxiella burnetii	5	1	2	6	5	9	4	7	0	1	1	0	41
Coxsackie B N.T.	1	0	0	0	2	0	0	0	0	0	0	0	3
Coxsackie Type A09	2	1	1	0	1	3	3	0	0	4	1	0	16
Coxsackie Type A16	0	0	0	0	0	0	0	0	1	0	0	0	1
Coxsackie Type B01	0	2	1	0	4	8	37	24	13	7	7	0	101
Coxsackie Type B02	0	0	0	2	2	2	2	0	1	3	2	0	14
Coxsackie Type B03	2	4	0	0	0	0	2	1	0	1	1	1	12
Coxsackie Type B04	1	0	0	3	4	4	6	2	5	6	0	1	32
Coxsackie Type B05	0	0	1	2	0	2	5	0	1	4	0	0	15
Cytomegalovirus	211	173	221	162	187	210	193	213	199	198	226	206	2399
Echovirus N.T.	0	0	2	0	1	0	0	0	0	0	0	0	3
Echovirus Type 06	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 07	0	0	0	0	0	0	2	4	2	0	0	1	9
Echovirus Type 09	0	0	1	0	3	1	9	8	3	4	2	0	31
Echovirus Type 11	1	0	0	0	0	2	0	3	3	3	2	3	17
Echovirus Type 14	1	1	0	0	0	0	0	1	2	1	4	1	11
Echovirus Type 15	0	0	0	0	0	1	0	0	0	0	0	0	1
Echovirus Type 16	0	0	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 17	0	0	0	0	0	1	7	10	4	1	2	0	25
Echovirus Type 18	0	0	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 22	2	0	0	2	0	0	0	1	2	1	0	1	9
Echovirus Type 25	0	0	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 29	0	0	0	0	0	1	0	0	0	0	0	0	1
Echovirus Type 30	2	2	1	0	1	3	7	13	8	2	4	0	43
Echovirus Type 31	1	1	0	1	0	0	0	0	0	0	0	0	3
Entero N.T.	92	73	77	75	71	62	110	132	138	144	119	104	1197
Epstein-Barr Virus	267	210	352	378	233	260	225	357	243	285	136	145	3091
Flavi/Dengue N.T.	0	0	0	1	1	0	0	0	1	2	0	0	5
Hepatitis A Virus	203	181	203	192	133	123	156	125	154	173	197	130	1970
Hepatitis B Virus	393	359	346	308	407	501	430	383	404	374	350	391	4646
Hepatitis C Virus	417	468	390	432	432	517	329	425	432	458	451	504	5255
Hepatitis Delta-HDV	6	5	2	1	3	3	3	1	1	3	2	1	31
Herpes Group	206	284	203	219	224	232	180	185	237	211	153	183	2517
Herpes Simplex N.T.	416	379	356	331	338	420	174	174	185	157	303	250	3483
Herpes Simplex Type 1	444	376	356	430	400	419	493	490	507	483	429	452	5279
Herpes Simplex Type 2	403	383	469	509	462	521	640	566	645	527	499	504	6128
HTLV - I	2	0	0	0	0	0	0	5	1	4	2	1	15
HTLV III/LAV = HIV - 1	518	409	532	484	488	279	465	433	392	368	390	390	5148
Human Herpes Virus 6	1	0	0	1	2	3	1	2	0	0	0	0	10
Influenza A Virus N.T.	521	136	36	19	1	0	0	1	0	1	7	2	724
Influenza B Virus	58	7	1	5	2	1	2	1	0	3	0	7	87
Measles	53	23	21	133	287	229	89	36	10	0	2	8	891
Molluscum contagiosum	4	2	2	3	2	0	1	2	1	1	2	0	20
Mumps	1	3	1	4	1	2	4	5	1	2	2	1	27
Mycoplasma pneumoniae	124	69	107	92	64	45	66	51	76	94	84	78	950
Norwalk Agent	55	37	25	10	36	10	2	2	3	4	19	37	240
Papovavirus Group	0	4	1	3	0	2	0	2	0	0	0	0	12
Parainfluenza Virus N.T.	0	0	3	0	0	5	22	6	4	10	11	22	83
Parainfluenza Virus Type 1	36	10	3	21	9	3	5	0	1	0	1	2	91
Parainfluenza Virus Type 2	18	5	5	4	1	0	2	0	2	2	7	4	50
Parainfluenza Virus Type 3	5	21	28	15	34	76	79	48	34	41	101	113	596
Parainfluenza Virus Type 4	0	0	0	0	0	0	0	0	0	1	0	0	1
Parvovirus B19	6	11	11	51	29	46	23	20	12	13	1	9	232
Polio - Vac. Strain	4	0	1	0	1	0	2	0	0	0	0	1	9
Polio Vac. Type 1	4	5	3	3	4	6	4	6	4	0	3	1	43
Polio Vac. Type 2	4	6	2	3	10	7	2	1	2	2	6	4	49
Polio Vac. Type 3	0	2	1	0	9	5	2	7	4	3	4	3	40
Reovirus (All Types)	0	0	0	0	0	3	0	0	2	4	0	0	9
Respiratory Syncytial Virus	1028	1044	534	205	70	32	15	9	12	83	54	154	3240
Rhinovirus (All Types)	0	7	1	13	10	2	1	4	5	5	3	3	54
Rickettsiae	0	0	0	0	0	0	1	0	0	1	0	0	2
Rotavirus	241	511	564	570	222	86	38	20	23	40	100	240	2655
Rubella	123	239	289	283	232	175	74	17	16	38	102	83	1661
Varicella-Zoster Virus	56	79	69	92	69	84	101	56	57	57	63	76	869
TOTALS	**7227**	**7017**	**6606**	**6387**	**5720**	**5778**	**4969**	**4764**	**4834**	**4747**	**5074**	**5272**	**68354**

Table 7. Laboratory Evidence of Human Viral Infections by Month, Jan-1993 to Dec-1993

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	101	88	102	101	103	101	102	97	91	98	134	148	1266
Adenovirus Type 01	9	0	3	2	2	3	2	1	1	4	2	3	32
Adenovirus Type 02	4	3	7	5	4	4	5	6	2	9	3	3	55
Adenovirus Type 03	1	4	4	2	4	1	1	0	1	3	8	9	38
Adenovirus Type 04	0	0	1	1	1	2	1	0	0	0	0	1	7
Adenovirus Type 05	0	0	0	1	2	1	0	1	1	6	1	0	13
Adenovirus Type 06	1	0	0	0	0	0	0	0	0	0	0	0	1
Adenovirus Type 07	0	0	0	0	0	0	0	0	0	0	2	0	2
Adenovirus Type 40/41	0	0	6	0	1	3	0	1	1	0	1	0	13
Astrovirus	5	5	10	3	1	2	2	0	2	5	6	11	52
C. trachomatis	800	812	874	991	859	871	643	1002	1049	831	1144	941	10817
Calicivirus	1	0	1	0	1	1	1	3	1	2	2	2	15
California Enceph.	0	0	0	1	0	0	1	2	0	0	0	0	4
Chlamydia psittaci	0	2	4	2	3	1	1	1	0	1	0	0	15
Chlamydiae N.T.	207	160	205	203	277	179	429	286	345	228	251	209	2979
Contag. Pus. Derm (ORF)	0	0	0	1	0	1	0	0	0	0	0	0	2
Coronavirus	0	0	0	2	0	0	0	0	0	0	1	1	4
Coxiella burnetii	0	0	0	1	5	1	1	2	0	0	0	1	11
Coxsackie A N.T.	0	0	0	0	0	0	0	0	0	1	0	0	1
Coxsackie B N.T.	1	0	0	0	1	1	0	1	0	0	0	1	5
Coxsackie Type A09	0	0	0	3	0	1	1	0	0	0	2	1	8
Coxsackie Type A16	0	0	0	0	0	0	0	0	0	1	0	0	1
Coxsackie Type B01	0	0	0	0	0	3	2	0	1	0	1	1	8
Coxsackie Type B02	2	0	0	1	0	0	0	0	2	0	0	1	6
Coxsackie Type B03	2	0	0	0	2	0	0	0	1	0	0	1	6
Coxsackie Type B04	0	0	0	0	0	0	0	0	2	4	0	0	6
Coxsackie Type B05	0	0	0	3	4	5	6	5	7	6	2	0	38
Cytomegalovirus	185	192	225	222	211	206	230	251	202	242	267	253	2686
Echovirus N.T.	0	0	0	0	1	0	0	1	0	0	1	0	3
Echovirus Type 03	0	1	0	0	0	1	1	0	1	0	2	5	11
Echovirus Type 04	0	0	0	0	0	0	0	0	1	0	49	9	59
Echovirus Type 07	0	0	0	0	0	1	0	0	1	7	0	0	9
Echovirus Type 09	0	3	3	0	1	9	16	13	6	6	4	1	62
Echovirus Type 11	2	0	1	2	1	1	5	10	16	15	5	1	59
Echovirus Type 12	0	0	0	0	0	0	0	0	0	0	1	0	1
Echovirus Type 16	0	0	0	0	0	0	0	0	0	1	0	0	1
Echovirus Type 17	0	0	0	0	0	0	0	0	0	0	1	0	1
Echovirus Type 18	0	0	0	0	0	0	0	0	0	2	1	0	3
Echovirus Type 19	0	1	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 22	0	0	0	0	1	0	2	5	2	7	2	2	21
Echovirus Type 23	0	0	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 24	0	0	0	0	0	0	0	0	0	0	0	1	1
Echovirus Type 25	0	0	0	0	0	1	0	0	3	7	5	2	18
Echovirus Type 30	0	0	0	0	0	0	1	3	1	4	0	0	9
Echovirus Type 34	0	0	0	0	0	0	0	0	0	0	0	1	1
Entero N.T.	82	90	79	68	67	60	87	137	160	126	90	80	1126
Epstein-Barr Virus	163	208	207	247	315	397	299	271	278	318	320	323	3346
Flavi/Dengue N.T.	0	2	4	2	1	0	1	2	4	6	1	0	23
Hepatitis A Virus	101	103	127	98	55	65	92	85	116	91	41	58	1032
Hepatitis B Virus	406	354	361	323	330	318	294	318	320	375	246	325	3970
Hepatitis C Virus	702	597	560	482	571	448	618	622	890	469	1006	740	7705
Hepatitis Delta-HDV	2	2	3	4	1	1	1	0	1	7	1	1	24
Herpes Group	193	114	130	117	153	29	144	156	146	166	98	106	1552
Herpes Simplex N.T.	129	267	228	182	187	157	157	200	183	166	195	187	2238
Herpes Simplex Type 1	480	478	618	560	462	521	589	587	564	527	579	544	6509
Herpes Simplex Type 2	513	654	669	580	581	423	548	596	673	563	604	587	6991
HTLV - I	3	2	7	4	6	4	0	0	2	3	0	4	35
HTLV - II	0	0	0	0	0	0	0	0	1	0	0	0	1
HTLV III/LAV = HIV - 1	409	170	166	360	272	332	146	161	175	138	182	176	2687
Human Herpes Virus 6	3	0	0	0	1	0	0	2	0	1	2	3	12
Influenza A Virus N.T.	8	130	284	256	104	13	2	4	0	3	13	195	1012
Influenza B Virus	58	294	308	150	31	2	1	1	0	1	3	0	849
Measles	6	4	5	4	7	3	3	0	1	1	1	4	39
Molluscum contagiosum	1	1	3	3	1	0	1	1	4	0	3	3	21
Mumps	1	5	7	6	7	4	6	3	0	1	4	5	49
Mycoplasma pneumoniae	78	64	69	39	29	33	35	50	48	82	93	100	720
Norwalk Agent	58	62	50	19	36	5	3	7	1	11	5	38	295
Papovavirus Group	0	0	3	2	1	0	0	0	0	0	3	2	11
Parainfluenza Virus N.T.	17	3	4	15	9	6	10	5	8	8	39	58	182
Parainfluenza Virus Type 1	0	2	2	2	2	6	2	7	22	47	63	98	253
Parainfluenza Virus Type 2	8	2	4	3	2	1	2	3	7	10	18	28	88
Parainfluenza Virus Type 3	75	46	39	32	34	29	21	14	10	15	23	31	369
Parainfluenza Virus Type 4	1	0	0	0	0	0	0	0	0	0	1	0	2
Parvovirus B19	6	17	32	22	42	48	18	20	9	13	17	9	253
Polio - Vac. Strain	0	1	1	2	1	1	0	1	1	0	1	1	10
Polio Vac. Type 1	1	3	2	1	4	4	1	2	4	1	1	2	26
Polio Vac. Type 2	1	2	0	0	4	1	4	0	2	1	1	0	16
Polio Vac. Type 3	1	2	1	2	3	2	5	0	5	2	3	3	29
Reovirus (All Types)	0	1	0	0	0	1	3	0	5	3	1	0	14
Respiratory Syncytial Virus	338	636	756	442	247	102	47	14	32	70	119	366	3169
Rhinovirus (All Types)	2	4	5	6	5	1	7	2	2	6	7	8	55
Rickettsia prowazekii	0	0	0	1	0	0	0	0	0	0	0	0	1
Rickettsiae	0	2	1	0	1	0	0	2	1	0	0	1	8
Rotavirus	258	240	324	289	191	89	37	11	12	71	128	191	1841
Rubella	29	90	96	121	103	101	38	21	9	58	49	44	759
Varicella-Zoster Virus	73	47	70	79	66	71	81	57	54	51	61	63	773
TOTALS	**5527**	**5970**	**6671**	**6070**	**5418**	**4678**	**4756**	**5053**	**5490**	**4901**	**5920**	**5993**	**66447**

Table 8. Laboratory Evidence of Human Viral Infections by Month, Jan-1994 to Dec-1994

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	98	87	84	109	119	127	101	118	96	86	100	129	1254
Adenovirus Type 01	3	0	6	7	6	2	2	1	4	1	0	4	36
Adenovirus Type 02	1	6	3	2	7	3	3	5	4	7	2	7	50
Adenovirus Type 03	7	3	4	5	4	3	3	3	3	1	6	3	45
Adenovirus Type 04	3	0	2	0	0	0	0	0	0	1	0	0	6
Adenovirus Type 05	1	0	0	1	4	1	0	0	1	0	0	0	8
Adenovirus Type 06	1	1	0	1	0	0	2	0	0	0	0	0	5
Adenovirus Type 07	3	1	1	0	0	0	0	0	0	0	0	0	5
Adenovirus Type 40/41	0	0	0	1	2	1	0	0	0	0	0	1	5
Alphavirus N.T.	0	0	0	1	0	0	0	0	0	0	0	0	1
Astrovirus	13	5	11	1	3	3	0	2	2	0	7	2	49
C. pneumoniae	0	0	0	0	0	0	6	8	4	26	19	23	86
C. trachomatis	909	562	852	802	917	900	848	1057	804	935	779	126	9491
Calicivirus	1	3	0	0	0	0	0	0	2	2	7	2	17
California Enceph.	1	0	0	0	0	0	0	0	0	0	0	0	1
Chlamydia psittaci	2	24	3	0	29	1	3	1	2	4	0	0	69
Chlamydiae N.T.	200	557	257	195	210	219	186	218	220	204	174	133	2773
Coronavirus	0	2	1	0	0	0	0	0	0	0	0	0	3
Coxiella burnetii	0	1	0	2	4	2	0	3	2	3	0	2	19
Coxsackie A N.T.	0	0	0	0	0	0	0	0	0	1	1	0	2
Coxsackie B N.T.	0	0	1	0	1	1	0	0	0	0	0	0	3
Coxsackie Type A02	0	0	0	0	0	0	0	0	0	0	0	2	2
Coxsackie Type A04	0	0	0	0	0	0	0	0	0	3	0	0	3
Coxsackie Type A09	0	0	1	2	2	10	16	42	22	11	5	2	113
Coxsackie Type A16	0	0	0	1	0	0	0	0	1	0	0	0	2
Coxsackie Type B01	0	0	0	0	0	0	2	8	0	2	2	0	14
Coxsackie Type B02	0	0	0	0	0	2	5	0	5	1	5	2	20
Coxsackie Type B03	2	0	0	0	2	0	2	5	2	6	3	1	23
Coxsackie Type B04	0	0	0	0	0	8	10	8	0	0	1	0	27
Coxsackie Type B05	0	0	3	1	0	5	9	23	5	2	1	1	50
Coxsackie Type B06	0	0	0	0	1	0	1	2	2	0	2	1	9
Cytomegalovirus	244	206	193	193	167	211	198	222	195	209	151	145	2334
Echovirus N.T.	0	2	0	0	0	0	0	0	0	0	2	0	4
Echovirus Type 03	0	0	0	0	0	0	1	0	0	2	0	0	3
Echovirus Type 04	12	2	1	8	7	15	16	20	9	5	10	4	109
Echovirus Type 05	0	0	0	0	0	0	0	0	0	0	0	1	1
Echovirus Type 06	0	0	0	0	0	0	0	0	0	0	4	1	5
Echovirus Type 07	2	0	0	0	1	0	0	0	0	1	0	0	4
Echovirus Type 09	0	1	0	0	0	0	0	1	1	0	0	0	3
Echovirus Type 11	2	1	0	1	0	1	5	1	0	0	1	0	12
Echovirus Type 17	0	0	0	0	0	0	0	1	0	0	1	0	2
Echovirus Type 18	0	0	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 20	0	0	0	0	1	1	1	2	1	0	0	0	6
Echovirus Type 21	0	0	0	1	0	1	0	0	0	0	0	0	2
Echovirus Type 22	1	0	1	1	0	1	0	0	0	2	2	2	10
Echovirus Type 25	1	0	0	0	0	1	0	0	2	0	0	0	4
Echovirus Type 27	0	0	1	0	0	0	0	0	0	1	0	0	2
Echovirus Type 30	0	0	0	0	0	0	0	0	0	1	0	0	1
Echovirus Type 31	0	1	0	0	0	0	0	0	0	1	1	0	3
Entero N.T.	63	51	46	43	68	67	112	164	161	129	87	20	1011
Epstein-Barr Virus	290	268	378	344	317	384	180	223	191	162	244	265	3246
Flavi/Dengue N.T.	1	1	2	1	0	1	2	2	0	1	5	2	18
Hantavirus	0	0	0	0	0	1	2	1	1	0	0	0	5
Hepatitis A Virus	83	83	59	69	61	94	72	111	149	147	127	75	1130
Hepatitis B Virus	374	314	335	304	301	310	287	334	352	289	282	202	3684
Hepatitis C Virus	758	851	901	926	919	1035	1054	1101	720	1197	1268	972	11702
Hepatitis Delta-HDV	0	1	2	3	4	1	0	0	0	4	11	2	28
Herpes Group	131	167	139	139	163	157	129	141	149	138	145	13	1611
Herpes Simplex N.T.	67	81	68	113	90	67	73	98	95	84	27	19	882
Herpes Simplex Type 1	572	519	577	492	549	586	536	563	540	550	540	425	6449
Herpes Simplex Type 2	578	521	631	568	602	642	627	643	612	597	628	468	7117
HTLV - I	1	10	2	0	13	4	1	5	0	5	3	1	45
HTLV - II	0	1	0	0	1	1	0	0	0	0	1	0	4
HTLV III/LAV = HIV - 1	161	144	179	151	179	216	180	157	180	130	178	129	1984
Human Herpes Virus 6	1	0	1	0	0	1	2	0	0	3	3	1	12
Influenza A (H3N2)	17	31	41	3	1	0	0	0	0	0	0	0	93
Influenza A Virus N.T.	444	320	70	22	4	3	1	0	1	0	2	4	871
Influenza B Virus	17	4	4	2	0	0	0	0	0	1	1	2	31
Measles	2	8	3	10	66	71	12	19	5	6	2	4	208
Molluscum contagiosum	1	2	1	3	4	4	3	2	5	6	9	3	43
Mumps	6	6	4	2	6	5	4	3	2	5	3	3	49
Mycoplasma pneumoniae	92	70	64	112	94	81	76	77	181	187	214	146	1394
Norwalk Agent	77	41	41	31	16	7	9	11	10	9	29	69	350
Papovavirus Group	2	0	1	1	1	1	2	1	1	0	0	4	14
Parainfluenza Virus N.T.	0	0	0	0	0	1	0	0	0	0	0	2	3
Parainfluenza Virus Type 1	29	7	6	3	4	0	0	0	1	2	2	0	54
Parainfluenza Virus Type 2	18	5	10	9	5	1	0	1	3	5	4	7	68
Parainfluenza Virus Type 3	16	14	10	22	78	102	58	41	37	62	55	65	560
Parainfluenza Virus Type 4	1	1	0	0	1	0	0	0	3	2	2	1	11
Parvovirus B19	18	19	35	57	76	70	43	33	19	12	23	9	414
Polio - Vac. Strain	4	0	0	1	0	0	0	1	0	0	2	0	8
Polio Vac. Type 1	2	3	1	3	8	1	0	1	1	1	0	0	21
Polio Vac. Type 2	1	2	1	7	0	4	3	1	0	0	0	0	19
Polio Vac. Type 3	0	0	1	3	0	1	11	1	0	0	0	0	17
Reovirus (All Types)	0	1	0	0	1	1	0	1	1	2	1	0	8
Respiratory Syncytial Virus	438	808	670	298	116	59	19	5	8	32	160	454	3067
Rhinovirus (All Types)	6	5	6	17	10	12	5	2	10	11	26	9	119
Rickettsiae	0	0	0	1	0	0	0	0	0	1	0	0	2
Rotavirus	247	265	449	366	290	84	30	20	21	12	50	119	1953
Rubella	8	2	8	15	11	12	3	8	3	5	7	5	87
Torovirus	1	1	0	0	0	0	0	0	0	0	0	0	2
Varicella-Zoster Virus	53	39	60	51	82	86	79	80	84	104	55	61	834
TOTALS	**6087**	**6131**	**6231**	**5527**	**5626**	**5892**	**5035**	**5803**	**4935**	**5419**	**5482**	**4155**	**65925**

Table 9. Laboratory Evidence of Human Viral Infections by Month, Jan-1995 to Dec-1995

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	98	57	96	78	96	101	82	118	123	116	151	110	1226
Adenovirus Type 01	5	4	5	6	2	3	1	3	2	1	3	2	37
Adenovirus Type 02	8	5	6	7	10	6	2	4	2	3	2	3	58
Adenovirus Type 03	5	1	2	2	5	2	2	13	4	9	13	6	64
Adenovirus Type 04	1	0	0	0	0	0	0	0	0	1	0	1	3
Adenovirus Type 05	2	3	2	1	1	0	0	2	0	1	1	0	13
Adenovirus Type 06	2	0	1	0	2	2	0	0	0	0	1	1	9
Adenovirus Type 10	0	0	0	0	0	0	0	0	0	27	0	0	27
Adenovirus Type 40/41	5	1	0	0	2	1	1	1	1	3	2	0	17
Astrovirus	7	10	6	13	1	1	1	1	2	0	4	14	60
C. pneumoniae	11	9	7	28	20	8	6	9	11	17	25	11	162
C. trachomatis	783	751	851	728	821	583	379	787	681	937	932	744	8777
Calicivirus	10	2	2	0	0	7	1	0	1	0	8	13	44
Chlamydia psittaci	0	0	0	0	1	267	4	3	1	4	3	0	283
Chlamydiae N.T.	156	112	71	131	135	134	127	158	142	143	194	130	1633
Coronavirus	1	0	0	0	0	0	4	1	0	1	1	1	9
Coxiella burnetii	4	0	0	1	5	6	4	14	1	3	1	2	41
Coxsackie A N.T.	1	0	0	0	0	0	0	0	0	0	0	0	1
Coxsackie Type A01	0	2	0	0	0	0	0	0	0	0	0	0	2
Coxsackie Type A02	0	0	0	0	0	0	0	1	0	0	0	0	1
Coxsackie Type A03	0	0	0	0	0	0	0	1	0	0	0	0	1
Coxsackie Type A04	0	0	0	0	0	0	0	2	0	0	0	0	2
Coxsackie Type A05	0	0	0	0	0	0	0	1	0	0	0	0	1
Coxsackie Type A09	0	0	0	0	1	1	0	1	1	2	0	0	6
Coxsackie Type A16	0	2	0	0	0	1	1	2	0	7	4	0	17
Coxsackie Type A18	0	0	0	0	0	1	0	0	0	0	0	0	1
Coxsackie Type A24	0	0	0	0	0	5	0	1	1	3	2	0	12
Coxsackie Type B01	0	12	0	0	0	0	0	3	3	6	0	0	24
Coxsackie Type B02	0	0	0	0	0	1	7	12	13	6	5	3	47
Coxsackie Type B03	1	2	0	0	0	0	2	2	0	0	0	0	7
Coxsackie Type B04	1	0	0	0	0	0	0	0	5	3	0	0	9
Coxsackie Type B05	1	0	0	0	0	7	12	28	20	17	5	1	91
Coxsackie Type B06	0	0	0	0	0	0	0	0	0	0	1	0	1
Cytomegalovirus	193	195	206	185	183	200	189	228	194	181	223	224	2401
Echovirus N.T.	0	0	0	0	0	0	0	2	3	3	2	0	10
Echovirus Type 01	0	0	0	0	0	0	0	0	1	0	0	0	1
Echovirus Type 03	1	0	0	0	0	0	0	1	2	3	0	0	7
Echovirus Type 04	0	0	0	0	0	0	1	0	1	0	0	0	2
Echovirus Type 05	0	0	0	0	0	0	0	0	0	0	1	0	1
Echovirus Type 06	0	0	0	2	6	14	7	9	8	8	1	0	55
Echovirus Type 07	0	0	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 09	0	0	0	0	0	0	0	0	5	0	1	2	8
Echovirus Type 11	0	0	0	0	0	0	0	4	3	0	1	0	8
Echovirus Type 14	0	0	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 15	0	0	0	0	0	0	0	0	1	0	0	0	1
Echovirus Type 16	0	0	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 18	0	0	0	0	0	0	1	1	1	1	0	0	4
Echovirus Type 22	0	0	1	0	0	0	0	2	0	0	0	1	4
Echovirus Type 25	0	0	0	0	0	0	0	0	0	1	3	1	5
Echovirus Type 27	0	0	0	0	0	0	0	0	1	0	0	0	1
Echovirus Type 30	0	0	0	0	0	0	0	0	1	1	2	1	5
Echovirus Type 31	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 33	0	0	0	0	0	0	0	0	0	0	1	0	1
Entero N.T.	25	34	19	11	10	56	51	136	124	81	58	51	656
Epstein-Barr Virus	260	228	281	392	420	344	273	287	248	236	257	368	3594
Flavi/Dengue N.T.	2	1	2	1	1	1	1	6	4	5	3	6	33
Hepatitis A Virus	98	95	83	73	91	84	107	122	134	131	150	130	1298
Hepatitis B Virus	346	283	363	282	360	319	383	333	324	357	339	395	4084
Hepatitis C Virus	1204	1185	1085	1092	1626	1399	1261	1435	1387	1498	1448	1411	16031
Hepatitis Delta-HDV	1	1	0	1	2	4	0	0	0	0	2	2	13
Herpes Group	148	109	139	138	124	136	121	164	139	146	117	20	1501
Herpes Simplex N.T.	97	48	66	65	68	64	64	149	146	143	160	85	1155
Herpes Simplex Type 1	533	491	550	495	562	582	565	582	567	564	577	489	6557
Herpes Simplex Type 2	558	520	642	578	675	663	583	623	527	564	589	484	7006
HTLV - I	3	1	1	3	5	0	0	3	1	0	2	0	19
HTLV - II	3	0	1	2	0	1	0	0	2	1	0	1	11
HTLV III/LAV = HIV - 1	258	235	307	237	290	327	296	326	290	296	309	207	3378
Human Herpes Virus 6	1	0	0	0	1	1	0	0	2	0	0	1	6
Influenza A (H1N1)	0	0	3	5	3	0	0	0	0	1	57	64	133
Influenza A (H3N2)	5	10	41	13	0	0	0	0	0	0	0	0	69
Influenza A Virus N.T.	66	245	405	145	36	4	1	3	1	3	66	272	1247
Influenza B Virus	28	51	86	101	71	18	2	0	0	1	1	1	360
Measles	2	19	3	115	198	364	201	54	28	18	4	4	1010
Molluscum contagiosum	4	1	4	2	2	1	2	1	3	1	5	2	28
Mumps	6	7	10	20	27	12	13	6	8	11	11	4	135
Mycoplasma pneumoniae	233	194	136	88	113	94	54	75	88	97	122	157	1451
Norwalk Agent	120	52	10	42	36	8	3	6	12	1	59	60	409
Papovavirus Group	0	1	2	2	2	1	4	1	1	1	0	2	17
Parainfluenza Virus N.T.	1	0	0	0	0	0	0	1	1	3	14	22	42
Parainfluenza Virus Type 1	1	0	3	6	0	4	1	1	8	27	76	66	193
Parainfluenza Virus Type 2	8	7	12	2	3	4	0	0	3	19	29	29	116
Parainfluenza Virus Type 3	49	94	102	85	134	102	64	45	66	55	58	52	906
Parainfluenza Virus Type 4	4	0	0	0	0	0	0	0	0	0	0	1	5
Parvovirus B19	13	21	12	43	69	43	37	34	14	10	22	18	336
Polio - Vac. Strain	2	2	0	0	1	0	2	0	0	2	0	0	9
Polio Vac. Type 1	0	0	0	0	0	0	0	1	0	0	1	1	3
Polio Vac. Type 2	3	0	0	0	0	0	0	1	0	0	0	1	5
Polio Vac. Type 3	0	0	0	0	0	0	0	0	0	0	0	2	2
Reovirus (All Types)	0	0	0	0	0	0	1	2	1	0	0	2	6
Respiratory Syncytial Virus	516	575	663	425	257	74	35	14	31	26	95	239	2950
Rhinovirus (All Types)	5	4	5	12	25	18	8	9	0	11	16	7	120
Rickettsiae	0	0	0	0	0	0	0	1	2	1	0	0	4
Rotavirus	139	216	263	344	362	105	66	25	47	56	111	182	1916
Rubella	11	25	3	10	6	10	5	9	6	11	6	5	107
Torovirus	4	0	0	0	0	0	0	0	0	0	0	0	4
Varicella-Zoster Virus	125	74	68	56	90	96	100	104	75	129	60	74	1051
TOTALS	**6179**	**5997**	**6626**	**6068**	**6762**	**6290**	**5138**	**5976**	**5525**	**6014**	**6417**	**6188**	**73180**

Table 10. Laboratory Evidence of Human Viral Infections by Month, Jan-1996 to Dec-1996

AGENT NAME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus N.T.	138	117	88	103	105	96	93	90	62	103	115	94	1204
Adenovirus Type 01	1	1	7	1	6	3	4	1	0	3	0	5	32
Adenovirus Type 02	1	5	1	3	5	5	2	5	2	3	2	5	39
Adenovirus Type 03	7	2	1	2	0	0	1	1	0	4	5	9	32
Adenovirus Type 05	3	0	3	3	1	0	2	0	1	2	0	2	17
Adenovirus Type 06	0	0	2	0	0	0	0	1	0	0	0	0	3
Adenovirus Type 07	0	0	0	0	1	2	0	2	1	1	1	1	9
Adenovirus Type 19	0	0	0	0	0	0	0	0	0	0	1	0	1
Adenovirus Type 40/41	0	2	2	1	4	1	0	6	2	2	0	1	21
Astrovirus	19	25	12	8	5	7	2	0	6	0	3	2	89
C. pneumoniae	5	5	8	21	4	1	1	2	5	2	4	8	66
C. trachomatis	941	841	857	844	902	799	830	808	899	883	607	534	9745
Calicivirus	11	10	5	2	1	0	2	1	1	6	4	1	44
Chlamydia psittaci	2	0	3	0	0	0	0	2	0	1	1	0	9
Chlamydiae N.T.	142	146	90	117	157	112	140	71	121	150	120	313	1679
Coronavirus	0	0	0	0	0	0	0	0	2	0	0	0	2
Coxiella burnetii	3	1	0	4	4	3	6	4	0	4	1	0	30
Coxsackie A N.T.	0	0	5	0	0	0	0	0	0	0	0	0	5
Coxsackie B N.T.	0	0	0	0	1	0	0	0	0	0	0	0	1
Coxsackie Type A02	0	1	0	0	0	0	0	0	0	0	0	0	1
Coxsackie Type A03	0	1	0	0	0	0	0	0	0	0	0	0	1
Coxsackie Type A09	0	0	2	0	0	1	1	1	3	1	1	0	10
Coxsackie Type A16	2	0	0	0	0	0	0	2	0	0	0	0	4
Coxsackie Type B01	1	0	0	2	0	0	0	0	0	0	0	0	3
Coxsackie Type B02	1	0	0	1	0	0	0	2	7	5	3	0	19
Coxsackie Type B03	0	0	0	0	0	0	0	1	1	1	0	0	3
Coxsackie Type B04	0	1	1	0	0	0	0	1	5	4	3	4	19
Coxsackie Type B05	1	0	1	0	2	2	17	22	56	27	7	1	136
Cytomegalovirus	230	264	228	237	282	238	238	219	180	202	233	208	2759
Echovirus N.T.	0	0	0	0	1	0	0	0	0	0	1	1	3
Echovirus Type 01	0	0	0	0	0	0	0	0	2	0	0	0	2
Echovirus Type 02	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus Type 03	0	2	0	0	0	0	0	1	0	0	0	0	3
Echovirus Type 04	0	0	0	0	0	0	0	29	22	3	1	0	55
Echovirus Type 05	0	0	0	0	0	0	0	0	0	0	2	0	2
Echovirus Type 06	0	1	0	0	0	0	1	0	1	1	0	1	5
Echovirus Type 07	0	0	0	0	0	1	0	1	4	4	0	0	10
Echovirus Type 09	0	1	0	2	13	1	5	35	27	17	13	16	130
Echovirus Type 11	0	1	0	0	0	1	1	21	12	5	5	2	48
Echovirus Type 14	0	0	0	0	1	0	1	0	0	0	0	0	2
Echovirus Type 18	0	0	0	1	0	1	2	6	4	1	0	1	16
Echovirus Type 22	1	0	0	0	3	0	0	0	3	1	1	5	14
Echovirus Type 30	0	0	0	0	0	0	0	0	1	0	0	0	1
Entero N.T.	34	21	27	19	35	32	66	85	100	60	73	38	590
Entero Type 71 (BRGR)	0	0	2	0	0	0	0	0	0	0	0	0	2
Epstein-Barr Virus	296	334	368	353	434	367	259	323	254	319	306	225	3838
Flavi/Dengue N.T.	7	7	4	5	4	0	1	2	0	3	2	1	36
Hantavirus	0	0	0	0	1	0	0	0	0	0	0	0	1
Hepatitis A Virus	183	167	105	97	191	96	80	189	187	142	205	161	1783
Hepatitis B Virus	418	364	466	460	598	320	434	359	393	476	405	377	5070
Hepatitis C Virus	1813	1694	1476	1667	1818	1690	1497	1403	1603	1880	1392	1565	19518
Hepatitis Delta-HDV	2	1	25	2	1	1	2	3	1	2	1	0	41
Herpes Group	138	108	97	215	128	94	90	105	120	116	87	94	1392
Herpes Simplex N.T.	55	234	263	116	278	217	214	202	138	162	162	127	2168
Herpes Simplex Type 1	589	618	593	614	606	573	602	559	590	662	635	545	7188
Herpes Simplex Type 2	531	600	533	584	628	573	577	576	589	627	598	517	6933
HTLV - I	0	1	1	0	2	1	0	1	3	6	0	0	15
HTLV - II	0	1	0	0	0	0	2	1	5	1	0	0	10
HTLV III/LAV = HIV - 1	315	297	285	296	270	311	307	314	309	345	278	225	3550
Human Herpes Virus 6	2	4	8	4	4	1	4	6	3	3	3	0	42
Influenza A (H1N1)	18	4	0	1	0	0	0	0	0	0	0	1	24
Influenza A (H3N2)	9	1	8	2	2	0	0	0	0	0	21	49	92
Influenza A Virus N.T.	192	337	200	83	31	7	0	1	0	4	45	576	1478
Influenza B Virus	11	23	73	140	65	5	0	0	1	3	1	7	329
Measles	14	20	47	39	57	27	10	19	15	9	4	2	263
Molluscum contagiosum	3	0	1	2	1	2	2	0	3	3	1	0	18
Mumps	8	18	7	15	14	15	15	12	10	9	6	3	130
Mycoplasma pneumoniae	232	67	62	72	87	40	46	54	41	52	74	94	921
Norwalk Agent	98	135	69	62	48	15	15	10	9	2	44	82	589
Papovavirus Group	3	4	3	1	4	2	2	5	2	4	5	0	35
Parainfluenza Virus N.T.	28	27	44	29	20	19	7	7	5	9	8	16	219
Parainfluenza Virus Type 1	42	28	25	22	8	16	0	2	2	0	2	2	149
Parainfluenza Virus Type 2	14	6	9	11	4	2	3	3	0	1	3	3	59
Parainfluenza Virus Type 3	98	49	93	96	109	100	133	79	67	25	55	74	978
Parainfluenza Virus Type 4	0	0	0	0	0	0	0	0	0	0	7	2	9
Parvovirus B19	44	30	56	57	80	74	49	38	31	22	21	26	537
Polio - Vac. Strain	1	0	0	0	0	0	0	0	0	0	0	0	1
Polio Vac. Type 1	0	0	1	0	0	0	0	0	0	0	0	0	1
Polio Vac. Type 2	0	1	1	0	0	0	0	0	0	0	1	0	3
Powassan	0	1	0	0	0	0	0	0	0	0	0	0	1
Reovirus (All Types)	1	1	1	0	1	1	0	0	2	3	0	0	10
Respiratory Syncytial Virus	756	1279	1285	673	258	66	14	7	37	38	125	381	4919
Rhinovirus (All Types)	10	1	5	15	22	37	16	17	16	3	24	11	177
Rickettsiae	0	0	0	2	0	0	0	0	0	0	0	0	2
Ross River Fever	0	0	0	0	1	0	0	0	0	0	0	0	1
Rotavirus	244	416	432	514	299	96	45	10	12	24	47	91	2230
Rubella	7	9	8	25	34	51	23	26	12	35	33	27	290
Torovirus	6	3	0	0	0	2	0	0	0	1	2	2	16
Varicella-Zoster Virus	84	67	76	99	131	145	100	93	79	103	110	85	1172
TOTALS	**7816**	**8403**	**8075**	**7764**	**7783**	**6272**	**5964**	**5826**	**6069**	**6590**	**5918**	**6625**	**83105**

Table 11. The Five Most Frequently Diagnosed Agents, 1989-1996

Rank	1	2	3	4	5	Others	Total
1989 Agent	CT	HSV	RSV	HBV	EBV		
No. of Positives	13,327	11,190	2,808	2,627	2,436	18,125	50,513
%	26.38	22.15	5.56	5.20	4.82	35.88	100.00
1990 Agent	CT	HSV	HIV-1	HBV	RSV		
No. of Positives	15,489	12,256	4,490	3,578	3,518	22,137	61,468
%	25.20	19.94	7.30	5.82	5.72	36.01	100.00
1991 Agent	CT	HSV	HIV-1	HBV	HCV		
No. of Positives	14,475	13,524	5,269	4,252	4,039	31,905	73,464
%	19.70	18.41	7.17	5.79	5.50	43.43	100.00
1992 Agent	HSV	CT	HCV	HIV-1	HBV		
No. of Positives	14,890	10,258	5,255	5,148	4,646	28,157	68,354
%	21.78	15.01	7.69	7.53	6.80	41.19	100.00
1993 Agent	HSV	CT	HCV	HBV	EBV		
No. of Positives	15,738	10,817	7,705	3,970	3,346	24,871	66,447
%	23.69	16.28	11.60	5.97	5.04	37.43	100.00
1994 Agent	HSV	HCV	CT	HBV	EBV		
No. of Positives	14,448	11,702	9,491	3,684	3,246	23,354	65,925
%	21.92	17.75	14.40	5.59	4.92	35.43	100.00
1995 Agent	HCV	HSV	CT	HBV	EBV		
No. of Positives	16,031	14,718	8,777	4,084	3,594	25,976	73,180
%	21.91	20.11	11.99	5.58	4.91	35.50	100.00
1996 Agent	HCV	HSV	CT	HBV	RSV		
No. of Positives	19,518	16,289	9,745	5,070	4,919	27,564	83,105
%	23.49	19.60	11.73	6.10	5.92	33.17	100.00

CT = *C. trachomatis*; HSV= herpes simple virus; RSV = respiratory syncytial virus; HBV = hepatitis B virus; EBV = Epstein-Barr virus; HCV = hepatitis C virus; HIV = human immunodeficiency virus

Table 12 summarizes the data on those agents that can cause infections in the respiratory tract, including adenoviruses, influenza viruses, parainfluenza viruses, RSV, rhinoviruses, *Mycoplasma pneumoniae*, *Chlamydiae psittaci*, and *Chlamydiae pneumoniae*. Laboratory-confirmed infections caused by these agents accounted for 12.6% of all laboratory-diagnosed infections. A large proportion of patients infected with respiratory agents usually do not see a physician, and for a proportion of the patients who do, specimens will not be sent to the laboratory for viral examination. Nevertheless, the burden of respiratory infections caused by these viral, mycoplasma and chlamydiae agents is significant.

Table 12. Laboratory Evidence of Infections Caused by Respiratory Viral and Selected Non-viral Agents*

Year	Total No. of Positive Findings	No. of Positive Findings of Respiratory Agents	%
1989	50,513	6,873	13.61
1990	61,468	8,433	13.72
1991	73,464	9,559	13.01
1992	68,354	7,271	10.64
1993	66,447	8,128	12.23
1994	65,925	7,835	11.88
1995	73,180	9,474	12.95
1996	83,105	10,766	12.95
Total	**542,456**	**68,339**	**12.60**

* Includes adenoviruses, influenza viruses, parainfluenza viruses, RSV, rhinoviruses, *Mycoplasma pneumoniae*, *Chlamydiae psittaci* and *Chlamydiae pneumoniae*.

Laboratory Reports From Each Province Between 1989 and 1996

Laboratory evidence of infections with different agents varied among provinces (Tables 13 to 20). The proportion of reports of respiratory agents was higher in Alberta and Quebec but lower in the other provinces than the average proportion for all provinces. The number of positive reports of bloodborne or sexually transmitted pathogens, specifically HCV, HIV-1, parvovirus B19 and hepatitis B virus, was higher in British Columbia. Several factors could have been affecting the regional differences, such as incidence, diagnostic capability or emphasis of individual laboratories, and use of different methods with variable sensitivities. It would be of interest to identify the differences in real incidence and to investigate the contributing or limiting factors if there are indeed differences in incidence rates among different provinces.

Table 13. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1989

AGENTNAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	140	269	317	1	512	76	54	150	0	6	1525
Adenovirus Type 01	0	11	0	3	1	9	0	0	0	0	24
Adenovirus Type 02	0	38	0	1	0	15	0	0	0	0	54
Adenovirus Type 03	0	27	0	6	0	15	0	0	0	0	48
Adenovirus Type 04	0	0	0	0	0	3	0	0	0	0	3
Adenovirus Type 05	0	21	0	0	0	5	0	0	0	0	26
Adenovirus Type 06	0	1	0	1	0	0	0	0	0	0	2
Adenovirus Type 07	0	1	0	0	0	0	0	0	0	0	1
Adenovirus Type 08	0	0	0	0	2	0	0	0	0	0	2
Adenovirus Type 12	0	0	0	1	0	0	0	0	0	0	1
Astrovirus	0	1	0	0	18	0	0	0	0	0	19
C. trachomatis	42	695	3133	0	6919	180	701	1209	0	448	13327
Calicivirus	0	3	1	0	35	0	0	1	0	0	40
Chlamydia psittaci	0	32	0	0	0	0	0	0	0	0	32
Chlamydiae N.T.	4	3	0	1	388	152	41	1	0	0	590
Coronavirus	0	0	0	0	0	1	0	1	0	0	2
Cowpox Virus	3	3	0	0	14	0	3	1	0	0	24
Coxiella burnetii	1	1	0	0	9	1	0	2	0	0	14
Coxsackie A N.T.	0	10	9	0	0	0	0	0	0	0	19
Coxsackie B N.T.	0	0	0	0	1	0	0	0	0	0	1
Coxsackie Type A09	0	0	1	0	7	2	0	0	0	0	10
Coxsackie Type A16	0	1	0	0	1	2	0	0	0	0	4
Coxsackie Type B01	0	3	0	0	0	0	0	0	0	0	3
Coxsackie Type B02	0	1	1	0	0	0	0	0	0	0	2
Coxsackie Type B03	0	1	7	0	1	1	0	0	0	0	10
Coxsackie Type B04	0	1	6	0	5	0	0	2	0	0	14
Coxsackie Type B05	0	13	9	2	11	32	1	1	0	0	69
Coxsackie Type B06	0	1	2	0	1	0	0	0	0	0	4
Cytomegalovirus	614	441	103	13	838	118	8	25	0	27	2187
Echovirus N.T.	0	3	6	0	1	3	0	0	0	0	13
Echovirus Type 01	0	0	0	0	0	0	0	1	0	0	1
Echovirus Type 03	0	1	4	0	0	0	0	0	0	0	5
Echovirus Type 04	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 05	0	0	34	0	1	0	0	2	0	0	37
Echovirus Type 06	2	52	28	0	1	8	0	0	0	0	91
Echovirus Type 07	0	0	0	0	3	0	0	0	0	0	3
Echovirus Type 09	0	20	9	0	5	10	0	8	0	0	52
Echovirus Type 11	0	5	23	1	3	1	0	0	0	0	33
Echovirus Type 14	0	3	0	0	0	0	0	0	0	0	3
Echovirus Type 17	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 18	0	0	3	0	0	3	0	0	0	0	6
Echovirus Type 19	0	0	3	0	1	0	0	0	0	0	4
Echovirus Type 20	0	0	0	0	1	1	0	0	0	0	2
Echovirus Type 21	0	0	0	0	2	1	0	0	0	0	3
Echovirus Type 22	0	5	5	0	6	10	0	0	0	0	26
Echovirus Type 25	0	3	0	0	0	0	0	0	0	0	3
Echovirus Type 30	0	0	0	0	0	2	0	0	0	0	2
Echovirus Type 31	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 32	0	1	0	0	0	0	0	0	0	0	1
Entero N.T.	191	278	82	24	277	58	33	158	0	3	1104
Epstein-Barr Virus	391	234	372	9	391	326	16	69	0	628	2436
Hepatitis A Virus	361	91	139	5	109	77	3	5	0	9	799
Hepatitis B Virus	516	252	244	24	1039	311	14	104	0	123	2627
Hepatitis Delta-HDV	0	0	0	0	0	0	2	0	0	0	2
Herpes Group	31	1100	15	111	612	12	20	24	0	2	1927
Herpes Simplex N.T.	2930	1	1	0	1578	25	3	0	0	0	4538
Herpes Simplex Type 1	455	220	381	0	1325	279	33	298	0	66	3057
Herpes Simplex Type 2	666	439	322	0	1622	147	31	321	0	47	3595
HTLV - I	0	1	0	0	0	0	1	0	0	0	2
HTLV III/LAV = HIV - I	839	153	22	0	796	263	3	48	0	16	2140
Influenza A Virus N.T.	143	335	54	0	282	33	0	46	0	3	896
Influenza B Virus	20	37	3	0	43	18	0	3	0	0	124
Measles	12	29	0	0	146	598	0	2	0	28	815
Molluscum contagiosum	0	1	0	0	9	0	0	0	0	0	10
Mumps	10	25	0	1	7	6	0	2	0	0	51
Mycoplasma pneumoniae	85	65	6	8	136	31	7	52	0	58	448
Norwalk Agent	2	1	0	0	57	0	0	0	0	0	60
Papovavirus Group	1	0	1	0	3	6	0	0	0	0	11
Parainfluenza Virus N.T.	0	91	0	0	24	3	0	0	0	0	118
Parainfluenza Virus Type 1	6	39	13	0	98	24	0	7	0	0	187
Parainfluenza Virus Type 2	16	26	9	1	31	17	0	5	0	0	105
Parainfluenza Virus Type 3	45	70	9	1	200	76	0	10	0	1	412
Parvovirus B19	4	0	0	0	18	48	0	0	0	44	114
Polio - Vac. Strain	0	3	0	0	0	0	0	0	0	0	3
Polio N.T.	8	5	0	0	0	6	0	0	0	0	19
Polio Type 1	0	6	25	0	0	2	0	0	0	0	33
Polio Type 2	0	12	27	0	1	4	0	0	0	0	44
Polio Type 3	0	7	34	0	1	3	0	0	0	0	45
Polio Vac. Type 2	0	0	2	0	0	0	0	0	0	0	2
Reovirus (All Types)	4	1	3	0	19	0	0	0	0	0	27
Respiratory Syncytial Virus	474	301	474	0	841	476	66	78	0	98	2808
Rhinovirus (All Types)	1	0	0	2	53	1	0	0	0	0	57
Rotavirus	107	200	338	3	971	221	60	153	0	336	2389
Rubella	239	168	170	0	32	8	0	2	0	0	619
Varicella-Zoster Virus	106	100	11	5	246	58	0	9	0	9	544
TOTALS	**8469**	**5964**	**6461**	**224**	**19755**	**3788**	**1100**	**2800**	**0**	**1952**	**50613**

Table 14. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1990

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	161	403	215	68	427	81	11	73	0	0	1439
Adenovirus Type 01	0	0	0	15	1	13	0	0	0	0	29
Adenovirus Type 02	0	29	0	29	1	18	0	0	0	0	77
Adenovirus Type 03	0	13	0	25	3	20	0	0	0	0	61
Adenovirus Type 04	0	1	0	8	1	3	0	0	0	0	13
Adenovirus Type 05	0	50	0	12	1	8	0	0	0	0	71
Adenovirus Type 06	0	0	0	1	0	0	0	0	0	0	1
Adenovirus Type 07	0	1	0	1	1	0	0	0	0	0	3
Adenovirus Type 31	0	0	0	1	0	0	0	0	0	0	1
Adenovirus Type 40/41	0	0	1	10	0	0	4	0	0	0	15
Astrovirus	0	1	0	0	56	0	0	4	0	0	61
C. trachomatis	66	588	2661	4113	5998	312	495	858	0	398	15489
Calicivirus	0	0	1	1	22	0	0	1	0	0	25
Chlamydia psittaci	4	13	0	0	0	0	1	0	0	0	18
Chlamydiae N.T.	2	79	2	5	452	11	0	0	0	0	551
Cowpox Virus	1	0	0	0	3	0	0	0	0	0	4
Coxiella burnetii	1	1	0	1	25	1	0	6	0	0	35
Coxsackie A N.T.	0	27	13	2	0	0	0	0	0	0	42
Coxsackie B N.T.	0	1	2	1	0	0	0	0	0	0	4
Coxsackie Type A02	0	0	0	0	1	0	0	0	0	0	1
Coxsackie Type A05	0	0	1	1	0	0	0	0	0	0	2
Coxsackie Type A09	0	10	5	6	3	26	0	0	0	0	50
Coxsackie Type A16	0	1	1	0	0	0	0	0	0	0	2
Coxsackie Type A22	0	0	0	0	0	1	0	0	0	0	1
Coxsackie Type B01	0	11	0	0	0	2	0	0	0	0	13
Coxsackie Type B02	0	3	0	3	5	5	0	0	0	0	16
Coxsackie Type B03	0	1	0	0	2	6	0	0	0	0	9
Coxsackie Type B04	0	1	0	0	2	3	0	1	0	0	7
Coxsackie Type B05	0	4	13	3	8	0	0	1	0	0	29
Coxsackie Type B06	0	1	0	0	0	0	0	1	0	0	2
Cytomegalovirus	581	528	98	145	1015	131	10	27	0	11	2546
Echovirus N.T.	0	3	0	0	0	1	0	0	0	0	4
Echovirus Type 01	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 02	0	3	0	0	0	1	0	0	0	0	4
Echovirus Type 03	0	1	1	0	0	0	0	0	0	0	2
Echovirus Type 04	0	0	0	0	0	2	0	0	0	0	2
Echovirus Type 05	0	4	1	0	1	0	0	0	0	0	6
Echovirus Type 06	0	5	4	1	1	2	0	1	0	0	14
Echovirus Type 07	0	1	0	0	1	3	0	0	0	0	5
Echovirus Type 08	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 09	0	3	0	7	5	10	0	1	0	0	26
Echovirus Type 11	0	10	1	1	8	30	0	0	0	0	50
Echovirus Type 13	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 14	0	0	3	0	0	1	0	0	0	0	4
Echovirus Type 15	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 16	0	0	0	1	1	0	0	0	0	0	2
Echovirus Type 17	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 18	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 21	0	1	0	0	1	0	0	0	0	0	2
Echovirus Type 22	0	2	0	0	1	4	0	0	0	0	7
Echovirus Type 23	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 24	0	0	1	0	2	0	0	0	0	0	3
Echovirus Type 25	0	0	0	0	0	3	0	0	0	0	3
Echovirus Type 27	0	0	0	0	3	0	0	0	0	0	3
Echovirus Type 30	0	1	1	1	0	15	0	0	0	0	18
Echovirus Type 31	0	1	0	0	1	0	0	0	0	0	2
Entero N.T.	181	189	123	128	587	70	1	51	0	2	1332
Epstein-Barr Virus	614	234	376	159	579	373	53	68	0	38	2494
Hepatitis A Virus	294	143	224	84	200	149	0	2	0	5	1101
Hepatitis B Virus	557	421	225	322	1730	193	27	73	0	30	3578
Hepatitis C Virus	584	230	0	0	39	89	12	0	0	0	954
Hepatitis Delta-HDV	0	0	0	0	3	0	0	0	0	0	3
Herpes Group	34	997	6	1616	637	13	11	20	0	3	3337
Herpes Simplex N.T.	2776	0	11	1	1326	22	0	0	0	0	4136
Herpes Simplex Type 1	705	237	311	16	2188	243	39	253	0	73	4065
Herpes Simplex Type 2	543	376	297	3	2443	140	27	200	0	26	4055
HTLV - I	3	0	0	0	0	0	0	0	0	0	3
HTLV III/LAV = HIV - I	655	399	29	0	3015	340	8	37	0	74	490
Influenza A Virus N.T.	101	107	8	102	291	65	14	20	0	0	708
Influenza B Virus	22	135	7	9	45	1	0	0	0	0	219
Measles	2	4	0	0	223	1	0	39	0	2	271
Molluscum contagiosum	0	1	0	5	12	0	0	0	0	0	18
Mumps	8	11	1	3	8	1	0	0	0	0	32
Mycoplasma pneumoniae	125	222	106	190	726	44	6	16	0	26	1461
Norwalk Agent	2	2	0	16	163	0	0	12	0	0	195
Papovavirus Group	0	1	1	0	5	4	1	0	0	0	12
Parainfluenza Virus N.T.	0	136	0	2	13	0	0	0	0	0	151
Parainfluenza Virus Type 1	5	36	3	4	52	7	0	5	0	0	112
Parainfluenza Virus Type 2	4	7	4	7	20	1	0	1	0	0	44
Parainfluenza Virus Type 3	30	41	25	59	197	95	0	21	0	0	468
Parvovirus B19	5	6	11	0	29	1	0	0	0	0	52
Polio - Vac. Strain	0	0	0	0	2	0	0	0	0	0	2
Polio N.T.	16	1	0	0	54	5	0	0	0	0	76
Polio Type 1	1	23	8	1	3	0	0	0	0	0	36
Polio Type 2	1	27	17	1	7	1	0	0	0	0	54
Polio Type 3	2	17	17	1	7	0	0	0	0	0	44
Polio Vac. Type 3	0	0	0	0	1	0	0	0	0	0	1
Reovirus (All Types)	0	3	2	1	1	0	0	1	0	0	8
Respiratory Syncytial Virus	599	395	483	379	982	514	95	13	0	58	3518
Rhinovirus (All Types)	8	0	0	2	30	0	0	0	0	0	40
Rotavirus	127	193	461	142	1386	222	62	117	0	33	2743
Rubella	21	35	15	2	71	17	0	0	0	1	162
Varicella-Zoster Virus	145	83	27	98	293	54	1	9	0	2	712
TOTALS	**8986**	**6518**	**5823**	**7815**	**25422**	**3379**	**878**	**1932**	**0**	**715**	**61468**

Table 15. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1991

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	108	209	193	47	672	100	10	91	0	12	1442
Adenovirus Type 01	0	8	0	26	1	23	0	0	0	0	58
Adenovirus Type 02	0	24	0	57	1	21	0	0	0	0	103
Adenovirus Type 03	0	6	0	16	0	34	0	0	0	0	56
Adenovirus Type 04	0	6	0	19	0	2	0	0	0	0	27
Adenovirus Type 05	0	14	0	13	0	1	0	0	0	0	28
Adenovirus Type 06	0	0	0	4	0	0	0	0	0	0	4
Adenovirus Type 07	0	2	0	0	0	0	0	0	0	0	2
Adenovirus Type 12	0	0	0	1	0	0	0	0	0	0	1
Adenovirus Type 40/41	0	0	52	11	5	0	0	0	0	0	68
Astrovirus	0	0	0	0	49	0	0	5	0	0	54
C. trachomatis	41	529	2593	4351	4616	329	602	917	0	497	14475
Calicivirus	0	0	0	0	26	0	0	0	0	0	26
Chlamydia psittaci	0	33	2	1	0	0	0	0	0	0	36
Chlamydiae N.T.	4	62	283	5	1967	24	138	0	0	0	2483
Contag. Pus. Derm (ORF)	0	1	0	0	0	0	0	0	0	0	1
Coronavirus	0	0	0	2	0	0	0	0	0	0	2
Cowpox Virus	0	0	0	0	1	0	0	0	0	0	1
Coxiella burnetii	0	4	0	0	19	3	0	2	0	0	28
Coxsackie A N.T.	0	0	2	0	0	0	0	0	0	0	2
Coxsackie B N.T.	0	0	1	11	0	3	0	0	0	0	15
Coxsackie Type A09	0	0	1	3	4	5	0	0	0	0	13
Coxsackie Type A16	0	2	0	0	0	0	0	0	0	0	2
Coxsackie Type B01	0	8	9	2	1	1	0	0	0	0	21
Coxsackie Type B02	0	46	56	20	8	3	0	0	0	0	133
Coxsackie Type B03	0	1	1	1	2	5	0	0	0	0	10
Coxsackie Type B04	0	47	35	5	3	13	0	0	0	0	103
Coxsackie Type B05	0	1	2	0	1	2	0	0	0	0	6
Coxsackie Type B06	0	1	0	1	0	0	0	0	0	0	2
Cytomegalovirus	352	338	110	176	1253	192	6	30	0	20	2477
Echovirus N.T.	0	0	1	0	3	1	0	0	0	0	5
Echovirus Type 05	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 06	0	1	2	1	1	7	0	0	0	0	12
Echovirus Type 07	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 09	1	0	0	2	0	0	0	0	0	0	3
Echovirus Type 11	0	4	3	0	11	38	0	0	0	0	56
Echovirus Type 14	0	0	1	0	0	1	0	0	0	0	2
Echovirus Type 15	0	0	2	0	0	0	0	0	0	0	2
Echovirus Type 16	0	2	12	0	0	1	0	0	0	0	15
Echovirus Type 17	0	1	0	1	0	0	0	0	0	0	2
Echovirus Type 21	0	0	1	0	0	2	0	0	0	0	3
Echovirus Type 22	0	2	4	0	0	4	0	0	0	0	10
Echovirus Type 24	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 30	0	8	1	4	76	16	0	0	0	7	112
Echovirus Type 31	0	1	0	0	1	0	0	0	0	0	2
Entero N.T.	126	113	117	209	928	175	10	62	0	0	1740
Epstein-Barr Virus	894	159	780	140	718	516	2	97	0	0	3306
Hepatitis A Virus	393	58	330	102	460	235	4	3	0	7	1592
Hepatitis B Virus	640	388	132	441	2301	213	40	61	0	36	4252
Hepatitis C Virus	1518	262	0	101	1819	296	23	0	0	20	4039
Hepatitis Delta-HDV	0	0	0	0	31	0	0	0	0	0	31
Herpes Group	903	714	9	1748	599	22	15	9	0	2	4021
Herpes Simplex N.T.	2262	1	0	0	1293	39	1	0	0	0	3596
Herpes Simplex Type 1	455	262	380	22	2532	701	63	234	0	82	4731
Herpes Simplex Type 2	598	371	292	4	3064	427	135	246	0	60	5197
HTLV - I	1	0	0	0	0	0	0	0	0	0	1
HTLV III/LAV = HIV - I	726	139	18	0	3892	424	8	41	0	21	5269
Human Herpes Virus Type 6	0	1	0	0	4	3	1	0	0	0	9
Influenza A Virus N.T.	41	122	63	88	456	79	2	3	0	0	854
Influenza B Virus	68	128	61	113	387	67	0	6	0	15	845
Measles	18	7	6	41	1824	39	1	1	0	3	1940
Molluscum contagiosum	0	0	0	6	10	0	0	0	0	0	16
Mumps	18	9	4	1	41	3	0	0	0	0	76
Mycoplasma pneumoniae	135	270	66	351	694	66	5	19	0	127	1733
Norwalk Agent	1	0	1	39	163	20	0	9	0	0	233
Papovavirus Group	2	0	0	0	6	10	0	0	0	0	18
Parainfluenza Virus N.T.	0	63	0	21	8	0	0	0	0	0	92
Parainfluenza Virus Type 1	50	47	14	5	132	23	1	4	0	0	276
Parainfluenza Virus Type 2	18	10	3	4	50	4	0	2	0	0	91
Parainfluenza Virus Type 3	47	47	48	89	217	92	0	22	0	8	570
Parvovirus B19	12	4	19	0	66	30	0	0	0	1	132
Polio - Vac. Strain	0	0	0	0	6	7	0	0	0	0	13
Polio N.T.	5	0	0	0	6	2	0	0	0	0	13
Polio Type 1	1	9	10	0	4	1	0	0	0	0	25
Polio Type 2	0	1	15	0	1	2	0	0	0	0	19
Polio Type 3	0	7	12	1	4	1	0	0	0	0	25
Polio Vac. Type 1	0	0	3	1	3	4	0	0	0	0	11
Polio Vac. Type 2	0	2	5	1	6	6	0	0	0	0	20
Polio Vac. Type 3	0	0	5	1	3	3	0	0	0	0	12
Reovirus (All Types)	4	2	1	0	11	1	0	0	0	0	19
Respiratory Syncytial Virus	416	241	549	347	788	765	46	6	0	68	3226
Rhinovirus (All Types)	35	0	0	28	52	0	0	0	0	0	115
Rotavirus	138	146	363	83	1023	379	14	89	0	23	2258
Rubella	12	7	238	4	40	13	0	0	0	0	314
Varicella-Zoster Virus	183	107	51	91	292	74	1	25	0	4	828
TOTALS	**10226**	**5058**	**6962**	**8862**	**32657**	**5574**	**1128**	**1984**	**0**	**1013**	**73484**

Table 16. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1992

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	115	114	300	150	270	97	13	97	0	1	1157
Adenovirus Type 01	0	40	0	19	0	5	0	0	0	0	64
Adenovirus Type 02	0	31	0	16	0	8	0	0	0	0	55
Adenovirus Type 03	0	24	0	28	0	3	0	0	0	0	55
Adenovirus Type 04	0	5	0	11	0	4	0	0	0	0	20
Adenovirus Type 05	0	5	0	8	0	4	0	0	0	0	17
Adenovirus Type 07	0	7	0	1	0	0	0	0	0	0	8
Adenovirus Type 11	0	0	0	1	0	0	0	0	0	0	1
Adenovirus Type 40/41	0	0	0	0	6	0	0	0	0	0	6
Astrovirus	0	0	0	0	58	0	0	1	0	0	59
C. pneumoniae	0	3	0	0	0	0	0	0	0	0	3
C. trachomatis	53	584	2135	2384	3015	263	663	761	0	400	10258
Calicivirus	0	0	1	0	17	0	0	1	0	0	19
Chlamydia psittaci	0	10	2	1	0	3	0	0	0	0	16
Chlamydiae N.T.	23	17	0	1	2255	24	111	0	0	0	2431
Coronavirus	0	3	0	2	0	0	0	0	0	0	5
Coxiella burnetii	0	1	0	1	32	4	0	3	0	0	41
Coxsackie B N.T.	0	0	0	3	0	0	0	0	0	0	3
Coxsackie Type A09	0	0	1	0	13	2	0	0	0	0	16
Coxsackie Type A16	0	1	0	0	0	0	0	0	0	0	1
Coxsackie Type B01	0	1	2	0	0	98	0	0	0	0	101
Coxsackie Type B02	0	0	0	0	8	6	0	0	0	0	14
Coxsackie Type B03	0	4	0	0	5	3	0	0	0	0	12
Coxsackie Type B04	0	1	16	0	14	1	0	0	0	0	32
Coxsackie Type B05	0	1	1	0	11	2	0	0	0	0	15
Cytomegalovirus	511	253	124	159	1089	210	9	26	0	18	2399
Echovirus N.T.	0	1	0	0	0	2	0	0	0	0	3
Echovirus Type 06	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 07	0	4	5	0	0	0	0	0	0	0	9
Echovirus Type 09	0	1	1	3	0	26	0	0	0	0	31
Echovirus Type 11	0	2	7	6	0	1	0	0	0	1	17
Echovirus Type 14	0	0	10	1	0	0	0	0	0	0	11
Echovirus Type 15	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 16	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 17	0	0	20	5	0	0	0	0	0	0	25
Echovirus Type 18	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 22	0	1	7	0	1	0	0	0	0	0	9
Echovirus Type 25	0	0	0	1	0	0	0	0	0	0	1
Echovirus Type 29	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 30	0	5	0	0	2	31	0	0	0	5	43
Echovirus Type 31	0	1	1	0	1	0	0	0	0	0	3
Entero N.T.	153	107	93	261	445	96	5	37	0	0	1197
Epstein-Barr Virus	744	160	516	161	905	401	16	188	0	0	3091
Flavi/Dengue N.T.	3	2	0	0	0	0	0	0	0	0	5
Hepatitis A Virus	906	80	274	102	523	73	4	6	0	2	1970
Hepatitis B Virus	921	247	86	709	2294	199	53	104	0	33	4646
Hepatitis C Virus	2362	483	0	217	1852	212	68	30	0	31	5255
Hepatitis Delta-HDV	0	0	0	0	31	0	0	0	0	0	31
Herpes Group	23	46	14	1854	536	10	18	13	0	3	2517
Herpes Simplex N.T.	1813	694	1	5	947	21	1	1	0	0	3483
Herpes Simplex Type 1	1100	282	362	20	2529	568	67	290	0	61	5279
Herpes Simplex Type 2	1690	388	288	40	2958	391	48	294	0	31	6128
HTLV - I	9	4	0	1	0	1	0	0	0	0	15
HTLV III/LAV = HIV - I	1000	376	35	8	3219	352	17	29	0	12	5148
Human Herpes Virus Type 6	6	2	0	0	0	2	0	0	0	0	10
Influenza A Virus N.T.	96	101	62	58	327	46	4	17	0	13	724
Influenza B Virus	2	2	0	5	76	2	0	0	0	0	87
Measles	8	6	9	8	850	7	1	0	0	2	891
Molluscum contagiosum	1	1	1	6	8	0	2	1	0	0	20
Mumps	4	1	2	5	11	4	0	0	0	0	27
Mycoplasma pneumoniae	130	29	50	170	406	39	0	11	0	115	950
Norwalk Agent	0	3	0	0	191	20	0	26	0	0	240
Papovavirus Group	0	0	0	0	1	10	0	1	0	0	12
Parainfluenza Virus N.T.	0	78	0	0	4	1	0	0	0	0	83
Parainfluenza Virus Type 1	4	8	9	6	54	8	0	2	0	0	91
Parainfluenza Virus Type 2	2	1	3	5	26	11	0	2	0	0	50
Parainfluenza Virus Type 3	62	66	118	75	176	83	2	12	0	1	595
Parainfluenza Virus Type 4	0	0	0	0	0	1	0	0	0	0	1
Parvovirus B19	20	151	32	0	21	6	0	0	0	2	232
Polio - Vac. Strain	3	0	0	0	4	2	0	0	0	0	9
Polio Vac. Type 1	0	8	28	1	3	3	0	0	0	0	43
Polio Vac. Type 2	0	6	26	3	12	2	0	0	0	0	49
Polio Vac. Type 3	0	11	17	5	4	3	0	0	0	0	40
Reovirus (All Types)	0	0	1	0	8	0	0	0	0	0	9
Respiratory Syncytial Virus	320	171	470	256	1407	458	105	8	0	45	3240
Rhinovirus (All Types)	12	2	0	8	28	4	0	0	0	0	54
Rickettsiae	2	0	0	0	0	0	0	0	0	0	2
Rotavirus	52	114	509	139	1187	389	130	110	0	25	2655
Rubella	18	134	764	508	140	10	6	69	0	2	1651
Varicella-Zoster Virus	211	113	48	70	291	103	9	13	0	1	859
TOTALS	**12379**	**4997**	**6454**	**7507**	**28372**	**4336**	**1352**	**2153**	**0**	**804**	**68354**

Table 17. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1993

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	109	248	217	125	367	130	12	51	4	3	1266
Adenovirus Type 01	0	24	0	7	0	1	0	0	0	0	32
Adenovirus Type 02	0	36	0	14	0	5	0	0	0	0	55
Adenovirus Type 03	0	16	0	11	0	11	0	0	0	0	38
Adenovirus Type 04	0	0	0	6	1	0	0	0	0	0	7
Adenovirus Type 05	0	3	0	9	1	0	0	0	0	0	13
Adenovirus Type 06	0	1	0	0	0	0	0	0	0	0	1
Adenovirus Type 07	0	1	0	1	0	0	0	0	0	0	2
Adenovirus Type 40/41	0	11	0	0	2	0	0	0	0	0	13
Astrovirus	0	2	0	0	43	0	0	7	0	0	52
C. trachomatis	22	798	1916	3154	2991	170	683	668	0	415	10817
Calicivirus	0	0	2	0	11	0	0	2	0	0	15
California Enceph.	0	0	0	0	4	0	0	0	0	0	4
Chlamydia psittaci	0	10	0	0	1	4	0	0	0	0	15
Chlamydiae N.T.	7	12	3	2	2606	25	136	0	188	0	2979
Contag. Pus. Derm (ORF)	1	0	1	0	0	0	0	0	0	0	2
Coronavirus	0	0	2	2	0	0	0	0	0	0	4
Coxiella burnetii	0	1	0	0	1	2	0	7	0	0	11
Coxsackie A N.T.	0	0	1	0	0	0	0	0	0	0	1
Coxsackie B N.T.	0	0	0	5	0	0	0	0	0	0	5
Coxsackie Type A09	0	1	2	0	3	2	0	0	0	0	8
Coxsackie Type A16	0	0	0	0	0	1	0	0	0	0	1
Coxsackie Type B01	0	1	2	0	0	5	0	0	0	0	8
Coxsackie Type B02	0	0	1	0	3	2	0	0	0	0	6
Coxsackie Type B03	0	0	2	0	1	3	0	0	0	0	6
Coxsackie Type B04	0	1	2	0	0	3	0	0	0	0	6
Coxsackie Type B05	0	2	30	2	2	2	0	0	0	0	38
Cytomegalovirus	388	563	88	128	1207	227	17	41	3	24	2686
Echovirus N.T.	0	0	1	1	1	0	0	0	0	0	3
Echovirus Type 03	0	1	10	0	0	0	0	0	0	0	11
Echovirus Type 04	0	0	2	57	0	0	0	0	0	0	59
Echovirus Type 07	0	0	1	0	0	8	0	0	0	0	9
Echovirus Type 09	0	2	45	3	4	8	0	0	0	0	62
Echovirus Type 11	0	0	18	19	3	19	0	0	0	0	59
Echovirus Type 12	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 16	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 17	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 18	0	0	0	0	2	1	0	0	0	0	3
Echovirus Type 19	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 22	0	1	13	0	0	7	0	0	0	0	21
Echovirus Type 23	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 24	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 25	0	2	2	0	1	13	0	0	0	0	18
Echovirus Type 30	0	0	0	3	1	5	0	0	0	0	9
Echovirus Type 34	0	0	0	0	1	0	0	0	0	0	1
Entero N.T.	176	196	113	249	303	63	5	20	0	11	126
Epstein-Barr Virus	516	215	748	121	1375	219	15	136	1	0	3346
Flavi/Dengue N.T.	2	1	0	0	20	0	0	0	0	0	23
Hepatitis A Virus	443	98	184	133	146	16	1	6	0	5	1032
Hepatitis B Virus	949	293	85	958	1326	185	52	80	8	34	3970
Hepatitis C Virus	2641	882	308	146	3284	151	129	128	12	24	7705
Hepatitis Delta-HDV	0	5	0	0	19	0	0	0	0	0	24
Herpes Group	21	23	3	1237	236	1	12	19	0	0	1552
Herpes Simplex N.T.	69	1174	7	28	850	95	9	5	1	0	2238
Herpes Simplex Type 1	1756	304	383	113	2600	745	113	365	19	111	6509
Herpes Simplex Type 2	2611	390	241	9	2887	393	104	313	9	34	6991
HTLV - I	21	5	0	0	7	0	0	0	0	2	35
HTLV - II	0	0	0	0	0	0	0	0	0	1	1
HTLV III/LAV = HIV - I	908	357	17	10	1131	176	33	34	3	18	2687
Human Herpes Virus Type 6	7	0	0	0	0	3	2	0	0	0	12
Influenza A Virus N.T.	136	235	81	137	274	138	0	8	0	3	1012
Influenza B Virus	105	185	94	91	301	37	1	8	6	21	849
Measles	3	1	1	2	18	10	0	1	0	3	39
Molluscum contagiosum	4	1	2	4	9	0	0	1	0	0	21
Mumps	8	12	15	2	11	1	0	0	0	0	49
Mycoplasma pneumoniae	118	32	74	75	220	71	12	16	0	102	720
Norwalk Agent	0	4	0	0	248	15	0	24	0	4	295
Papovavirus Group	3	0	0	7	0	0	0	1	0	0	11
Parainfluenza Virus N.T.	0	156	24	0	1	1	0	0	0	0	182
Parainfluenza Virus Type 1	34	38	61	12	58	46	0	4	0	0	253
Parainfluenza Virus Type 2	16	2	2	12	40	10	0	5	1	0	88
Parainfluenza Virus Type 3	39	25	33	47	147	60	1	16	1	0	369
Parainfluenza Virus Type 4	0	0	0	0	0	2	0	0	0	0	2
Parvovirus B19	18	41	103	19	58	5	4	0	0	5	253
Polio - Vac. Strain	1	0	0	1	1	7	0	0	0	0	10
Polio Vac. Type 1	0	6	18	1	1	0	0	0	0	0	26
Polio Vac. Type 2	0	2	12	0	1	1	0	0	0	0	16
Polio Vac. Type 3	0	1	23	0	5	0	0	0	0	0	29
Reovirus (All Types)	0	3	0	2	8	0	0	1	0	0	14
Respiratory Syncytial Virus	494	321	339	385	939	351	177	53	50	60	3169
Rhinovirus (All Types)	1	4	0	4	44	2	0	0	0	0	55
Rickettsia prowazekii	0	0	0	1	0	0	0	0	0	0	1
Rickettsiae	1	1	0	4	2	0	0	0	0	0	8
Rotavirus	41	112	309	96	760	285	122	102	1	13	1841
Rubella	34	26	7	406	63	11	208	2	1	1	759
Varicella-Zoster Virus	179	166	46	82	229	52	6	12	0	1	773
TOTALS	**11882**	**7054**	**5697**	**7943**	**24879**	**3909**	**1854**	**2136**	**308**	**885**	**66447**

Table 18. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1994

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	161	51	360	114	334	146	25	62	1	0	1254
Adenovirus Type 01	0	28	0	1	0	7	0	0	0	0	36
Adenovirus Type 02	0	27	0	16	0	7	0	0	0	0	50
Adenovirus Type 03	0	24	0	12	0	9	0	0	0	0	45
Adenovirus Type 04	0	6	0	0	0	0	0	0	0	0	6
Adenovirus Type 05	0	4	0	4	0	0	0	0	0	0	8
Adenovirus Type 06	0	3	0	2	0	0	0	0	0	0	5
Adenovirus Type 07	0	3	0	2	0	0	0	0	0	0	5
Adenovirus Type 40/41	0	4	0	0	0	0	0	0	0	1	5
Alphavirus N.T.	0	0	0	0	1	0	0	0	0	0	1
Astrovirus	0	3	0	1	43	0	0	2	0	0	49
C. pneumoniae	0	0	86	0	0	0	0	0	0	0	86
C. trachomatis	37	552	1961	2778	2596	154	668	373	89	283	9491
Calicivirus	0	0	0	0	15	0	0	2	0	0	17
California Enceph.	0	0	0	0	1	0	0	0	0	0	1
Chlamydia psittaci	0	18	1	0	27	3	20	0	0	0	69
Chlamydiae N.T.	16	3	0	288	2277	58	114	2	15	0	2773
Coronavirus	0	0	1	2	0	0	0	0	0	0	3
Coxiella burnetii	0	2	0	0	10	7	0	0	0	0	19
Coxsackie A N.T.	0	0	2	0	0	0	0	0	0	0	2
Coxsackie B N.T.	0	0	3	0	0	0	0	0	0	0	3
Coxsackie Type A02	0	0	2	0	0	0	0	0	0	0	2
Coxsackie Type A04	0	0	3	0	0	0	0	0	0	0	3
Coxsackie Type A09	0	2	17	0	3	91	0	0	0	0	113
Coxsackie Type A16	0	0	2	0	0	0	0	0	0	0	2
Coxsackie Type B01	0	4	10	0	0	0	0	0	0	0	14
Coxsackie Type B02	0	0	6	0	4	10	0	0	0	0	20
Coxsackie Type B03	0	0	5	0	5	13	0	0	0	0	23
Coxsackie Type B04	0	0	19	5	2	1	0	0	0	0	27
Coxsackie Type B05	0	1	4	0	0	45	0	0	0	0	50
Coxsackie Type B06	0	0	9	0	0	0	0	0	0	0	9
Cytomegalovirus	312	261	63	183	1144	267	40	59	0	5	2334
Echovirus N.T.	0	2	0	0	0	2	0	0	0	0	4
Echovirus Type 03	0	0	1	0	0	2	0	0	0	0	3
Echovirus Type 04	0	11	70	27	0	1	0	0	0	0	109
Echovirus Type 05	0	0	0	0	1	0	0	0	0	0	1
Echovirus Type 06	0	0	5	0	0	0	0	0	0	0	5
Echovirus Type 07	0	0	1	0	0	3	0	0	0	0	4
Echovirus Type 09	0	1	1	0	0	1	0	0	0	0	3
Echovirus Type 11	0	0	2	0	0	10	0	0	0	0	12
Echovirus Type 17	0	1	1	0	0	0	0	0	0	0	2
Echovirus Type 18	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 20	0	0	6	0	0	0	0	0	0	0	6
Echovirus Type 21	0	0	2	0	0	0	0	0	0	0	2
Echovirus Type 22	0	1	5	0	0	4	0	0	0	0	10
Echovirus Type 25	0	0	0	0	0	4	0	0	0	0	4
Echovirus Type 27	0	2	0	0	0	0	0	0	0	0	2
Echovirus Type 30	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 31	0	2	0	1	0	0	0	0	0	0	3
Entero N.T.	257	6	105	227	236	105	18	55	2	0	1011
Epstein-Barr Virus	658	121	383	128	1139	444	39	182	152	0	3246
Flavi/Dengue N.T.	5	0	0	0	13	0	0	0	0	0	18
Hantavirus	5	0	0	0	0	0	0	0	0	0	5
Hepatitis A Virus	282	21	76	290	378	44	4	30	1	4	1130
Hepatitis B Virus	1148	70	141	710	1206	243	43	72	4	47	3684
Hepatitis C Virus	4528	334	712	281	5439	178	83	114	11	22	11702
Hepatitis Delta-HDV	0	0	0	0	20	0	8	0	0	0	28
Herpes Group	16	8	1	1391	168	13	3	11	0	0	1611
Herpes Simplex N.T.	37	44	9	1	719	66	5	0	1	0	882
Herpes Simplex Type 1	1568	265	392	5	2871	651	160	394	47	96	6449
Herpes Simplex Type 2	2399	295	287	14	3151	451	126	333	21	40	7117
HTLV - I	33	0	0	10	0	2	0	0	0	0	45
HTLV - II	4	0	0	0	0	0	0	0	0	0	4
HTLV III/LAV = HIV - I	1058	210	26	33	266	313	24	32	2	20	1984
Human Herpes Virus Type 6	6	3	0	0	3	0	0	0	0	0	12
Influenza A (H3N2)	31	0	14	18	30	0	0	0	0	0	93
Influenza A Virus N.T.	57	35	90	43	483	113	12	11	4	23	871
Influenza B Virus	0	0	3	8	4	0	1	2	0	13	31
Measles	7	17	9	8	117	48	0	0	0	2	208
Molluscum contagiosum	8	1	4	6	24	0	0	0	0	0	43
Mumps	8	1	10	2	12	15	1	0	0	0	49
Mycoplasma pneumoniae	182	71	439	78	295	60	8	16	167	78	1394
Norwalk Agent	10	7	0	0	315	9	0	7	0	2	350
Papovavirus Group	5	0	0	1	1	6	0	1	0	0	14
Parainfluenza Virus N.T.	0	0	3	0	0	0	0	0	0	0	3
Parainfluenza Virus Type 1	16	8	15	0	12	3	0	0	0	0	54
Parainfluenza Virus Type 2	14	11	0	6	22	13	1	1	0	0	68
Parainfluenza Virus Type 3	68	21	79	62	240	80	0	10	0	0	560
Parainfluenza Virus Type 4	0	0	0	0	0	11	0	0	0	0	11
Parvovirus B19	42	71	16	59	175	28	17	0	0	6	414
Polio - Vac. Strain	1	0	0	0	0	7	0	0	0	0	8
Polio Vac. Type 1	0	4	10	1	0	6	0	0	0	0	21
Polio Vac. Type 2	0	3	6	0	2	8	0	0	0	0	19
Polio Vac. Type 3	0	0	5	0	7	5	0	0	0	0	17
Reovirus (All Types)	1	0	2	1	4	0	0	0	0	0	8
Respiratory Syncytial Virus	318	104	455	111	918	868	212	9	33	39	3067
Rhinovirus (All Types)	0	3	0	4	112	0	0	0	0	0	119
Rickettsiae	0	0	0	0	2	0	0	0	0	0	2
Rotavirus	137	43	328	71	826	347	126	50	3	22	1953
Rubella	30	8	6	21	13	9	0	0	0	0	87
Torovirus	0	0	0	0	2	0	0	0	0	0	2
Varicella-Zoster Virus	217	88	46	57	281	112	18	13	2	0	834
TOTALS	**13682**	**2889**	**6320**	**7083**	**25969**	**5105**	**1776**	**1843**	**855**	**703**	**68925**

Table 19. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1995

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	126	73	303	109	408	116	16	66	2	7	1226
Adenovirus Type 01	0	16	0	12	0	6	3	0	0	0	37
Adenovirus Type 02	0	38	0	12	0	8	0	0	0	0	58
Adenovirus Type 03	0	15	0	41	0	8	0	0	0	0	64
Adenovirus Type 04	0	0	0	0	0	3	0	0	0	0	3
Adenovirus Type 05	0	2	0	6	0	5	0	0	0	0	13
Adenovirus Type 06	0	3	0	5	0	1	0	0	0	0	9
Adenovirus Type 10	0	0	0	0	27	0	0	0	0	0	27
Adenovirus Type 40/41	0	10	0	2	5	0	0	0	0	0	17
Astrovirus	0	0	2	0	53	0	0	5	0	0	60
C. pneumoniae	7	1	142	0	12	0	0	0	0	0	162
C. trachomatis	38	835	1420	2672	2355	192	536	353	116	260	8777
Calicivirus	0	3	2	0	38	0	0	1	0	0	44
Chlamydia psittaci	5	2	3	267	5	1	0	0	0	0	283
Chlamydiae N.T.	7	25	16	16	1465	18	86	0	0	0	1633
Coronavirus	0	6	0	2	1	0	0	0	0	0	9
Coxiella burnetii	0	3	0	0	30	2	0	6	0	0	41
Coxsackie A N.T.	0	0	1	0	0	0	0	0	0	0	1
Coxsackie Type A01	0	0	0	2	0	0	0	0	0	0	2
Coxsackie Type A02	0	0	0	0	1	0	0	0	0	0	1
Coxsackie Type A03	0	0	0	0	1	0	0	0	0	0	1
Coxsackie Type A04	0	0	0	0	2	0	0	0	0	0	2
Coxsackie Type A05	0	0	0	0	1	0	0	0	0	0	1
Coxsackie Type A09	0	0	0	0	1	5	0	0	0	0	6
Coxsackie Type A16	0	8	8	0	0	1	0	0	0	0	17
Coxsackie Type A18	0	0	1	0	0	0	0	0	0	0	1
Coxsackie Type A24	0	0	12	0	0	0	0	0	0	0	12
Coxsackie Type B01	0	12	0	11	1	0	0	0	0	0	24
Coxsackie Type B02	0	3	15	0	9	20	0	0	0	0	47
Coxsackie Type B03	0	2	1	0	3	1	0	0	0	0	7
Coxsackie Type B04	0	0	1	0	2	6	0	0	0	0	9
Coxsackie Type B05	0	1	88	0	1	1	0	0	0	0	91
Coxsackie Type B06	0	0	0	0	0	1	0	0	0	0	1
Cytomegalovirus	372	283	73	229	1063	281	27	38	0	35	2401
Echovirus N.T.	0	7	0	0	0	3	0	0	0	0	10
Echovirus Type 01	0	0	0	1	0	0	0	0	0	0	1
Echovirus Type 03	0	0	0	0	0	7	0	0	0	0	7
Echovirus Type 04	0	0	0	0	2	0	0	0	0	0	2
Echovirus Type 05	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 06	0	2	52	0	0	1	0	0	0	0	55
Echovirus Type 07	0	0	0	1	0	0	0	0	0	0	1
Echovirus Type 09	0	1	0	2	2	3	0	0	0	0	8
Echovirus Type 11	0	1	0	0	5	2	0	0	0	0	8
Echovirus Type 14	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 15	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 16	0	0	1	0	0	0	0	0	0	0	1
Echovirus Type 18	0	0	0	0	0	4	0	0	0	0	4
Echovirus Type 22	0	0	1	0	0	3	0	0	0	0	4
Echovirus Type 25	0	1	0	0	0	4	0	0	0	0	5
Echovirus Type 27	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 30	0	0	0	0	0	5	0	0	0	0	5
Echovirus Type 31	0	1	0	0	0	0	0	0	0	0	1
Echovirus Type 33	0	1	0	0	0	0	0	0	0	0	1
Entero N.T.	99	34	43	146	253	28	2	49	2	0	656
Epstein-Barr Virus	194	143	382	117	1783	505	35	298	137	0	3594
Flavi/Dengue N.T.	5	1	0	0	27	0	0	0	0	0	33
Hepatitis A Virus	379	41	104	258	442	55	3	10	3	3	1298
Hepatitis B Virus	1337	139	257	616	1274	270	55	85	13	36	4084
Hepatitis C Virus	6667	941	939	795	6020	258	132	213	33	33	16031
Hepatitis Delta-HDV	0	0	0	0	13	0	0	0	0	0	13
Herpes Group	12	9	2	1263	174	7	20	14	0	0	1501
Herpes Simplex N.T.	61	420	4	1	593	65	10	0	1	0	1155
Herpes Simplex Type 1	1329	262	378	22	3075	654	201	511	31	94	6557
Herpes Simplex Type 2	1717	264	310	15	3582	447	116	461	42	52	7006
HTLV - I	15	0	0	0	3	1	0	0	0	0	19
HTLV - II	11	0	0	0	0	0	0	0	0	0	11
HTLV III/LAV = HIV - I	1175	250	27	66	1413	386	18	36	2	5	3378
Human Herpes Virus Type 6	2	4	0	0	0	0	0	0	0	0	6
Influenza A (H1N1)	11	0	121	0	0	0	0	1	0	0	133
Influenza A (H3N2)	17	0	39	0	13	0	0	0	0	0	69
Influenza A Virus N.T.	136	250	51	111	555	118	8	8	4	8	1247
Influenza B Virus	18	65	35	36	140	44	13	4	2	3	360
Measles	5	4	7	3	980	6	1	0	0	4	1010
Molluscum contagiosum	1	0	0	3	23	0	0	1	0	0	28
Mumps	17	5	21	3	81	6	1	1	0	0	135
Mycoplasma pneumoniae	104	77	300	172	371	26	6	3	270	122	1451
Norwalk Agent	17	6	0	76	287	0	13	9	0	1	409
Papovavirus Group	3	1	1	1	4	6	0	1	0	0	17
Parainfluenza Virus N.T.	0	41	0	0	0	1	0	0	0	0	42
Parainfluenza Virus Type 1	38	30	15	5	75	19	5	5	1	0	193
Parainfluenza Virus Type 2	8	8	9	2	71	15	0	2	0	1	116
Parainfluenza Virus Type 3	66	32	66	63	598	73	1	5	2	0	906
Parainfluenza Virus Type 4	0	0	0	0	0	5	0	0	0	0	5
Parvovirus B19	43	75	63	21	78	8	3	40	3	2	336
Polio - Vac. Strain	0	0	0	0	0	9	0	0	0	0	9
Polio Vac. Type 1	0	1	0	0	0	2	0	0	0	0	3
Polio Vac. Type 2	0	0	0	1	0	4	0	0	0	0	5
Polio Vac. Type 3	0	0	1	0	0	1	0	0	0	0	2
Reovirus (All Types)	0	0	1	3	2	0	0	0	0	0	6
Respiratory Syncytial Virus	426	146	355	397	804	371	209	29	146	87	2950
Rhinovirus (All Types)	2	3	0	15	98	2	0	0	0	0	120
Rickettsiae	1	0	0	0	3	0	0	0	0	0	4
Rotavirus	170	51	314	85	891	182	130	95	0	38	1916
Rubella	24	29	8	13	24	7	2	0	0	0	107
Torovirus	0	0	0	0	4	0	0	0	0	0	4
Varicella-Zoster Virus	195	136	124	57	333	135	20	48	3	0	1061
TOTALS	**14880**	**4824**	**6121**	**7764**	**29580**	**4426**	**1672**	**2386**	**813**	**773**	**73180**

Table 20. Laboratory Evidence of Human Viral Infections in Canada by Province, Jan to Dec-1996

AGENT NAME	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	CANADA
Adenovirus N.T.	168	142	280	64	375	103	20	48	3	1	1204
Adenovirus Type 01	0	19	0	11	0	2	0	0	0	0	32
Adenovirus Type 02	0	29	0	10	0	0	0	0	0	0	39
Adenovirus Type 03	0	17	0	5	0	10	0	0	0	0	32
Adenovirus Type 05	0	5	0	10	0	2	0	0	0	0	17
Adenovirus Type 06	0	0	0	3	0	0	0	0	0	0	3
Adenovirus Type 07	0	4	0	3	0	2	0	0	0	0	9
Adenovirus Type 19	0	1	0	0	0	0	0	0	0	0	1
Adenovirus Type 40/41	0	14	0	0	7	0	0	0	0	0	21
Astrovirus	0	1	3	0	85	0	0	0	0	0	89
C. pneumoniae	7	0	58	0	0	1	0	0	0	0	66
C. trachomatis	48	1239	2106	2321	2304	169	564	628	121	24	59745
Calicivirus	0	1	1	0	42	0	0	0	0	0	44
Chlamydia psittaci	3	4	1	0	0	1	0	0	0	0	9
Chlamydiae N.T.	9	3	0	204	1284	5	173	0	1	0	1679
Coronavirus	0	0	0	2	0	0	0	0	0	0	2
Coxiella burnetii	2	1	0	0	17	10	0	0	0	0	30
Coxsackie A N.T.	0	0	5	0	0	0	0	0	0	0	5
Coxsackie B N.T.	0	1	0	0	0	0	0	0	0	0	1
Coxsackie Type A02	0	0	0	1	0	0	0	0	0	0	1
Coxsackie Type A03	0	0	0	1	0	0	0	0	0	0	1
Coxsackie Type A09	0	0	2	0	8	0	0	0	0	0	10
Coxsackie Type A16	0	4	0	0	0	0	0	0	0	0	4
Coxsackie Type B01	0	3	0	0	0	0	0	0	0	0	3
Coxsackie Type B02	0	1	2	0	10	6	0	0	0	0	19
Coxsackie Type B03	0	0	0	0	2	1	0	0	0	0	3
Coxsackie Type B04	1	0	13	1	0	4	0	0	0	0	19
Coxsackie Type B05	0	2	11	2	64	57	0	0	0	0	136
Cytomegalovirus	361	565	53	264	1040	351	50	51	1	23	2759
Echovirus N.T.	0	3	0	0	0	0	0	0	0	0	3
Echovirus Type 01	0	2	0	0	0	0	0	0	0	0	2
Echovirus Type 02	0	0	0	0	0	1	0	0	0	0	1
Echovirus Type 03	0	1	0	0	0	2	0	0	0	0	3
Echovirus Type 04	0	0	49	0	6	0	0	0	0	0	55
Echovirus Type 05	0	0	0	1	0	1	0	0	0	0	2
Echovirus Type 06	0	0	0	1	2	2	0	0	0	0	5
Echovirus Type 07	0	1	4	0	0	5	0	0	0	0	10
Echovirus Type 09	0	23	31	46	19	10	0	0	0	1	130
Echovirus Type 11	0	1	21	0	0	26	0	0	0	0	48
Echovirus Type 14	0	0	2	0	0	0	0	0	0	0	2
Echovirus Type 18	0	1	2	0	0	13	0	0	0	0	16
Echovirus Type 22	0	1	11	0	0	2	0	0	0	0	14
Echovirus Type 30	0	0	0	0	1	0	0	0	0	0	1
Entero N.T.	114	39	73	92	158	56	9	48	1	0	590
Entero Type 71 (BRGR)	2	0	0	0	0	0	0	0	0	0	2
Epstein-Barr Virus	177	164	329	106	2052	437	34	384	149	6	3838
Flavi/Dengue N.T.	15	1	0	2	18	0	0	0	0	0	36
Hantavirus	1	0	0	0	0	0	0	0	0	0	1
Hepatitis A Virus	454	100	297	195	647	68	4	14	2	2	1783
Hepatitis B Virus	1429	270	155	634	2153	252	44	104	5	24	5070
Hepatitis C Virus	7631	2304	580	737	7421	273	170	332	35	35	19518
Hepatitis Delta-HDV	1	4	0	0	35	0	1	0	0	0	41
Herpes Group	5	119	1	1029	194	14	20	10	0	0	1392
Herpes Simplex N.T.	68	806	4	0	1214	62	14	0	0	0	2168
Herpes Simplex Type 1	1470	299	362	27	3365	729	258	553	35	90	7188
Herpes Simplex Type 2	1591	322	254	24	3701	480	138	377	12	34	6933
HTLV - I	14	1	0	0	0	0	0	0	0	0	15
HTLV - II	10	0	0	0	0	0	0	0	0	0	10
HTLV III/LAV = HIV - I	1499	319	24	61	1209	361	25	37	0	15	3550
Human Herpes Virus Type 6	7	3	0	0	10	5	1	14	0	2	42
Influenza A (H1N1)	17	0	6	0	0	1	0	0	0	0	24
Influenza A (H3N2)	19	0	73	0	0	0	0	0	0	0	92
Influenza A Virus N.T.	161	230	74	108	667	127	84	20	0	7	1478
Influenza B Virus	28	21	18	61	188	11	2	0	0	0	329
Measles	41	28	18	4	112	59	0	0	1	0	263
Molluscum contagiosum	2	1	0	2	13	0	0	0	0	0	18
Mumps	15	39	17	6	43	7	1	2	0	0	130
Mycoplasma pneumoniae	110	120	93	57	195	21	1	2	241	81	921
Norwalk Agent	44	7	0	127	395	0	4	12	0	0	589
Papovavirus Group	1	0	5	1	13	15	0	0	0	0	35
Parainfluenza Virus N.T.	0	209	0	10	0	0	0	0	0	0	219
Parainfluenza Virus Type 1	19	21	50	30	20	7	0	2	0	0	149
Parainfluenza Virus Type 2	7	12	3	8	25	4	0	0	0	0	59
Parainfluenza Virus Type 3	75	26	108	82	608	67	3	9	0	0	978
Parainfluenza Virus Type 4	0	0	0	0	8	1	0	0	0	0	9
Parvovirus B19	257	61	77	35	88	5	0	14	0	0	537
Polio - Vac. Strain	0	0	0	0	0	1	0	0	0	0	1
Polio Vac. Type 1	0	0	0	0	0	1	0	0	0	0	1
Polio Vac. Type 2	0	0	1	1	0	1	0	0	0	0	3
Powassan	0	0	0	0	1	0	0	0	0	0	1
Reovirus (All Types)	2	2	2	1	3	0	0	0	0	0	10
Respiratory Syncytial Virus	436	594	486	371	1960	532	369	12	96	63	4919
Rhinovirus (All Types)	23	2	0	8	144	0	0	0	0	0	177
Rickettsiae	2	0	0	0	0	0	0	0	0	0	2
Ross River Fever	1	0	0	0	0	0	0	0	0	0	1
Rotavirus	147	119	336	64	1077	261	179	45	0	2	2230
Rubella	69	53	2	86	55	22	1	0	0	2	290
Torovirus	5	0	0	0	11	0	0	0	0	0	16
Varicella-Zoster Virus	236	166	128	60	392	119	51	20	0	0	1172
TOTALS	**16804**	**8551**	**6231**	**6979**	**33461**	**4785**	**2220**	**2738**	**703**	**633**	**83106**

Temporal Trends of Selected Agents in Different Regions of Canada

Respiratory viruses and enteroviruses showed seasonal variations, the former peaking in the winter and the latter in the summer/fall. It was noticed that influenza epidemic seasons appeared earlier in the west and then moved to the east[8]. It was also demonstrated that infections of rotavirus showed similar shifting patterns in North America[9].

To determine whether laboratory reports of these and other agents that cause infections in the respiratory tract or the gastrointestinal tract shared this characteristic during the whole 8-year period, the monthly number of reports from British Columbia, the prairie provinces (Alberta, Saskatchewan, Manitoba), Ontario, Quebec and the Atlantic provinces (New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland) were plotted against the totals for Canada (Figures 1-12).

The national pattern for laboratory diagnosis of measles was largely determined by outbreaks in one province in any 1 year (Figure 1). For adenoviruses, laboratory diagnoses suggested a year-round pattern of infection (Figure 2). The start of laboratory diagnosis of influenza A virus in British Columbia and the prairie provinces may have given rise to relatively more laboratory diagnoses earlier in some seasons. This may partly reflect the enthusiasm of some western laboratories for diagnosing influenza earlier in the season or the relative success of influenza surveillance programs in these same regions (Figure 3). It appears that influenza B arose later in the Atlantic provinces than nationally, whereas in the prairies and to some extent in British Columbia, influenza B diagnosis appeared to peak earlier than the national average (Figure 4). However, no regional trends were seen for parainfluenza laboratory diagnoses (Figure 5). RSV laboratory diagnosis peaked earlier in Quebec but later in Atlantic Canada than the national average (Figure 6). Overall, the peak of respiratory virus diagnosis may have been earlier in Quebec than nationally (Figure 7).

No predictable pattern could be identified for hepatitis A virus (HAV), except for the decline in the number of reports in Quebec after 1992 and the variability of HAV diagnosis by region over time (Figure 8). There were no reports of Coxsackie A and B viruses from the coastal provinces, and the number of reports from Ontario was disproportionately low relative to the population. Peak occurrences of Coxsackie viruses are sometimes the result of outbreaks in only one region (Figure 9). It is interesting to note the very limited echovirus reporting from coastal provinces and the predominance of reporting from the prairies and Quebec (Figure 10). For rotavirus, the prairies appeared to lead seasonal diagnoses, peaking earlier than the national average. The Quebec results seemed to be average in most years, but in the 1991-1992 and 1993-1994 seasons the Quebec rotavirus peaks built up earlier than average (Figure 11). For enteroviruses as a whole, a seasonal pattern was nevertheless noticeable, although increasing numbers of interseasonal diagnoses have been reported from Ontario and the prairies. In contrast to Coxsackie A and B viruses and echoviruses, enteroviruses were reported from the Atlantic and B.C. provinces (Figure 12).

Figure 1

Measles Virus in Canada by Region by Month

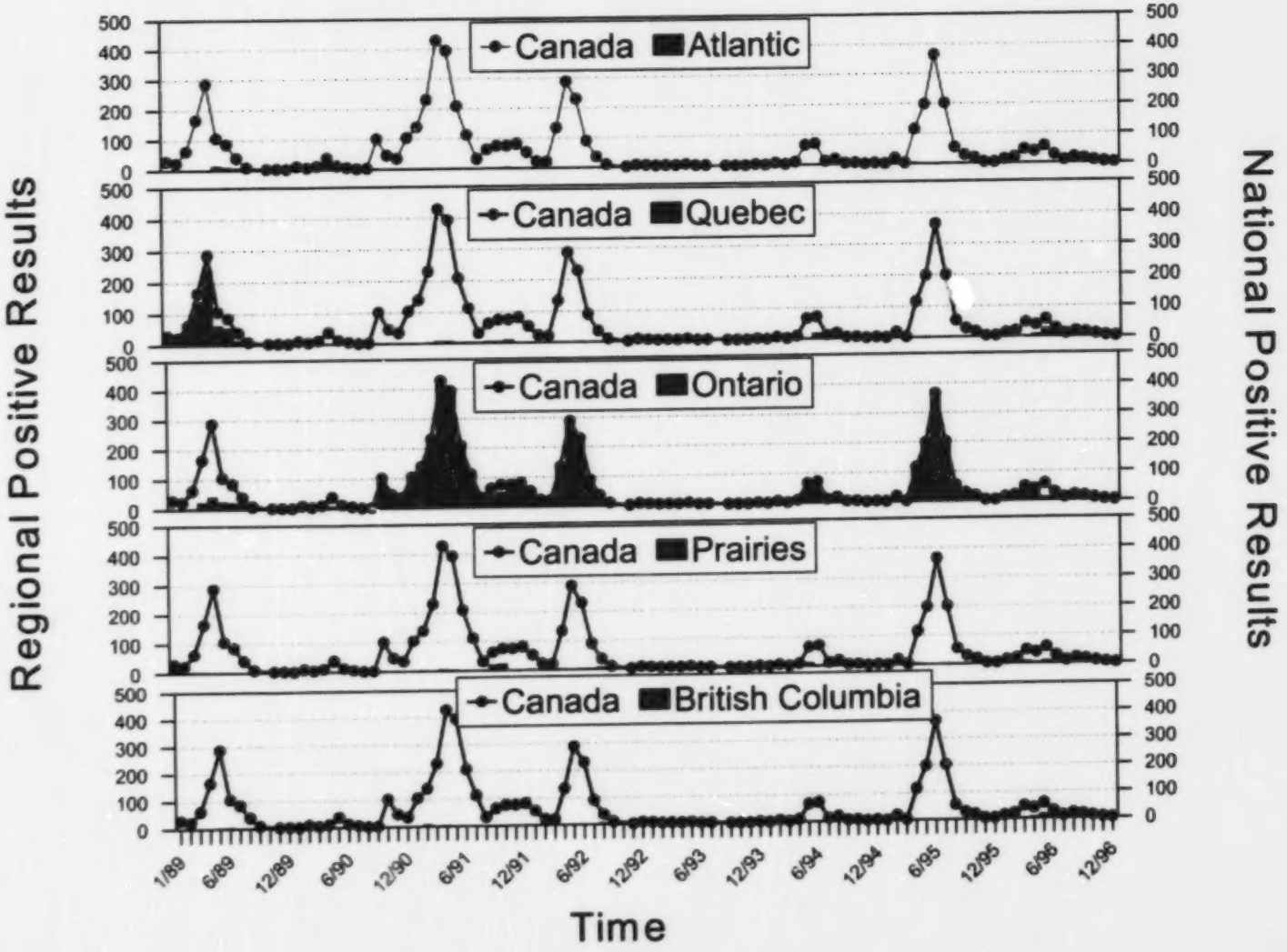


Figure 2

Adenoviruses in Canada by Region by Month

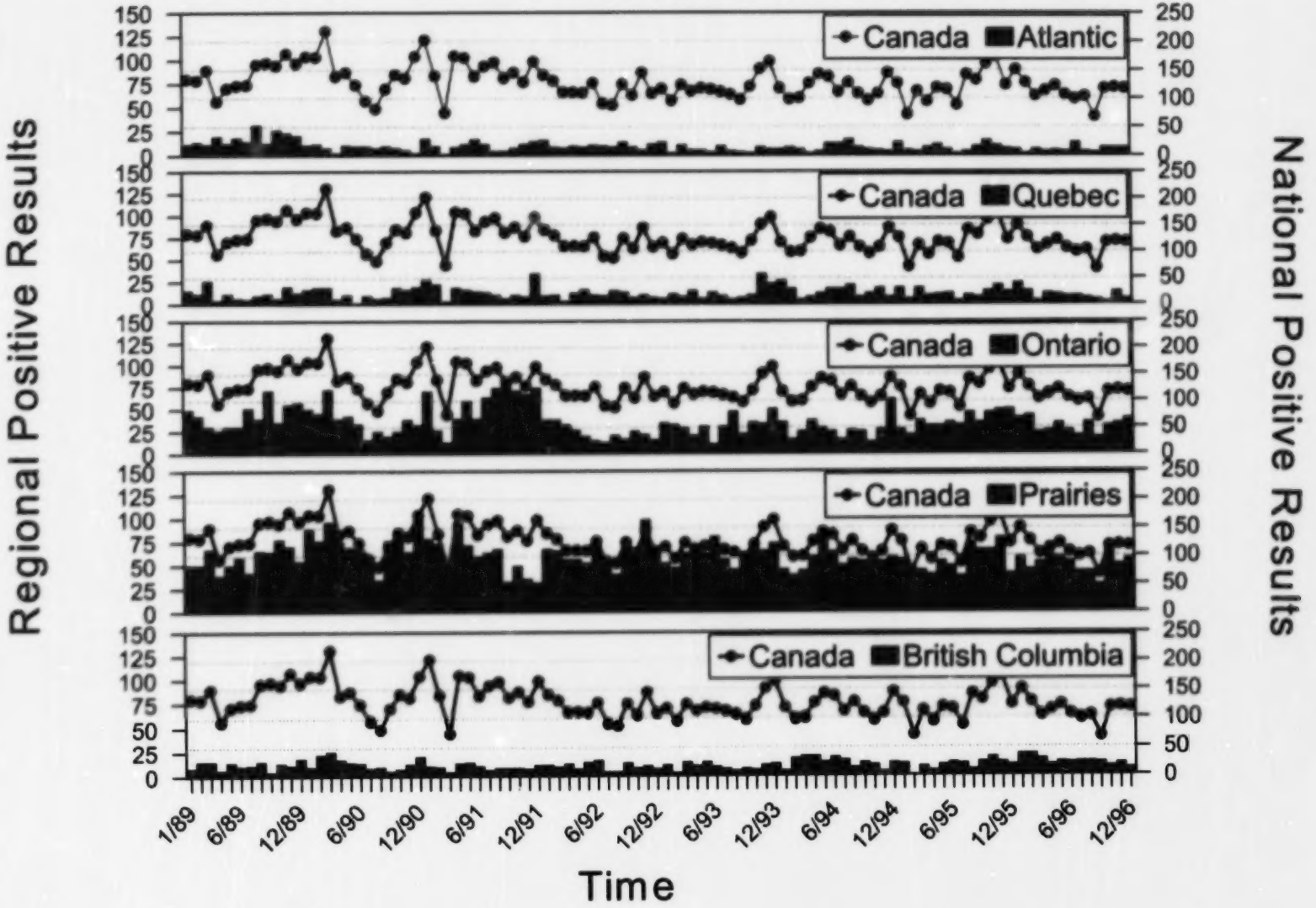


Figure 3

Influenza A Virus in Canada by Region by Month

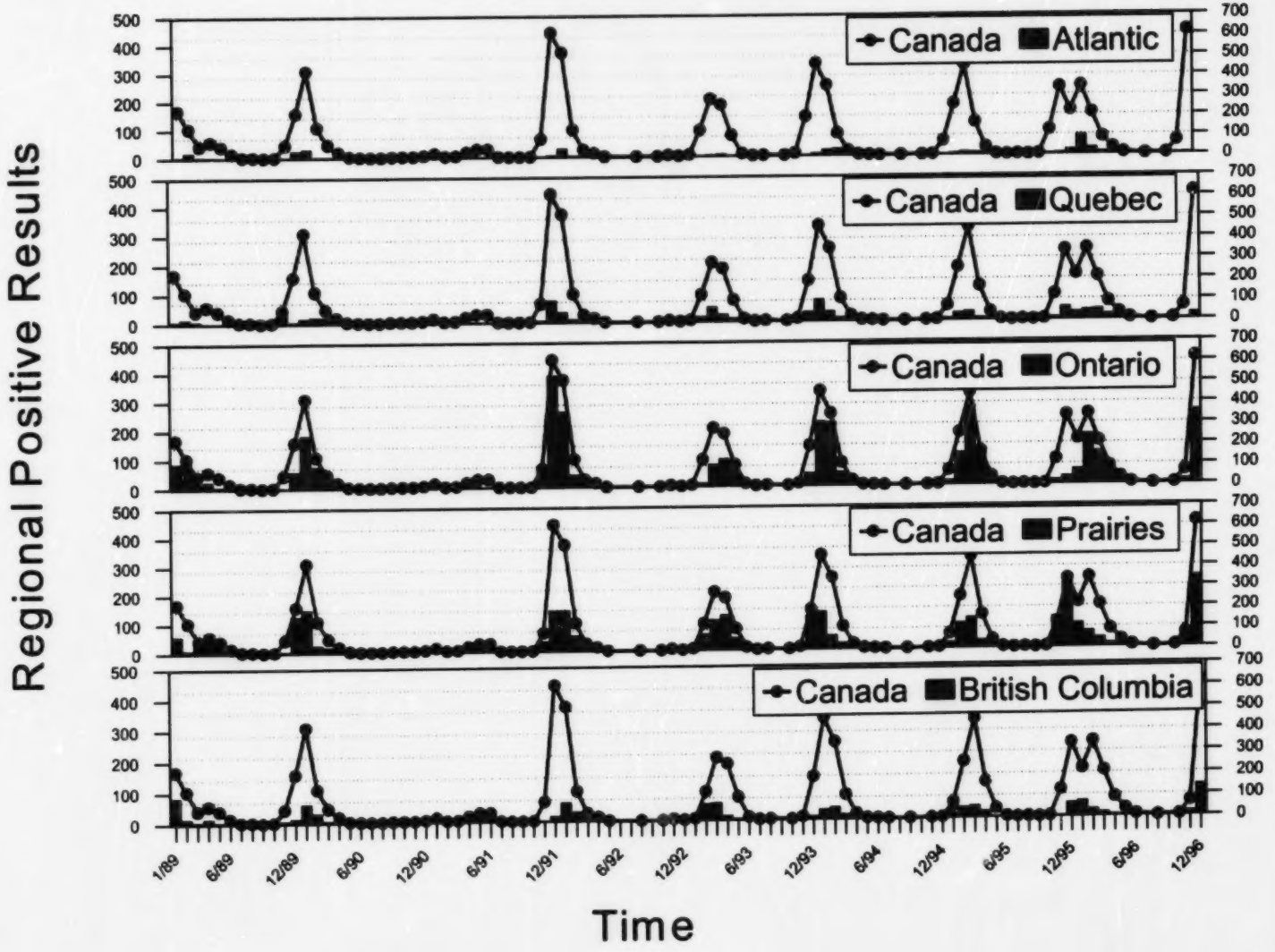


Figure 4

Influenza B Virus in Canada by Region by Month

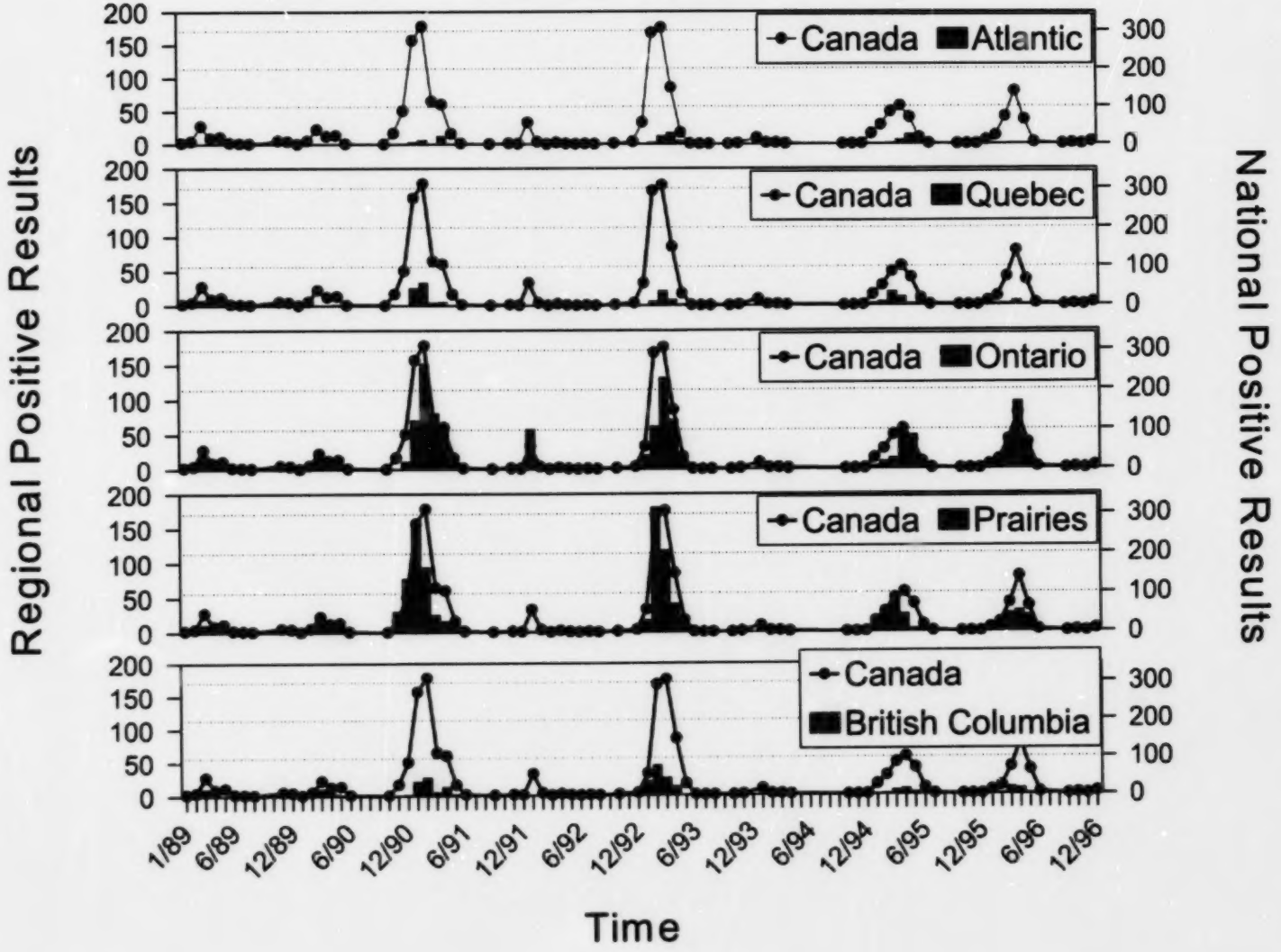


Figure 5

Parainfluenza Viruses in Canada by Region by Month

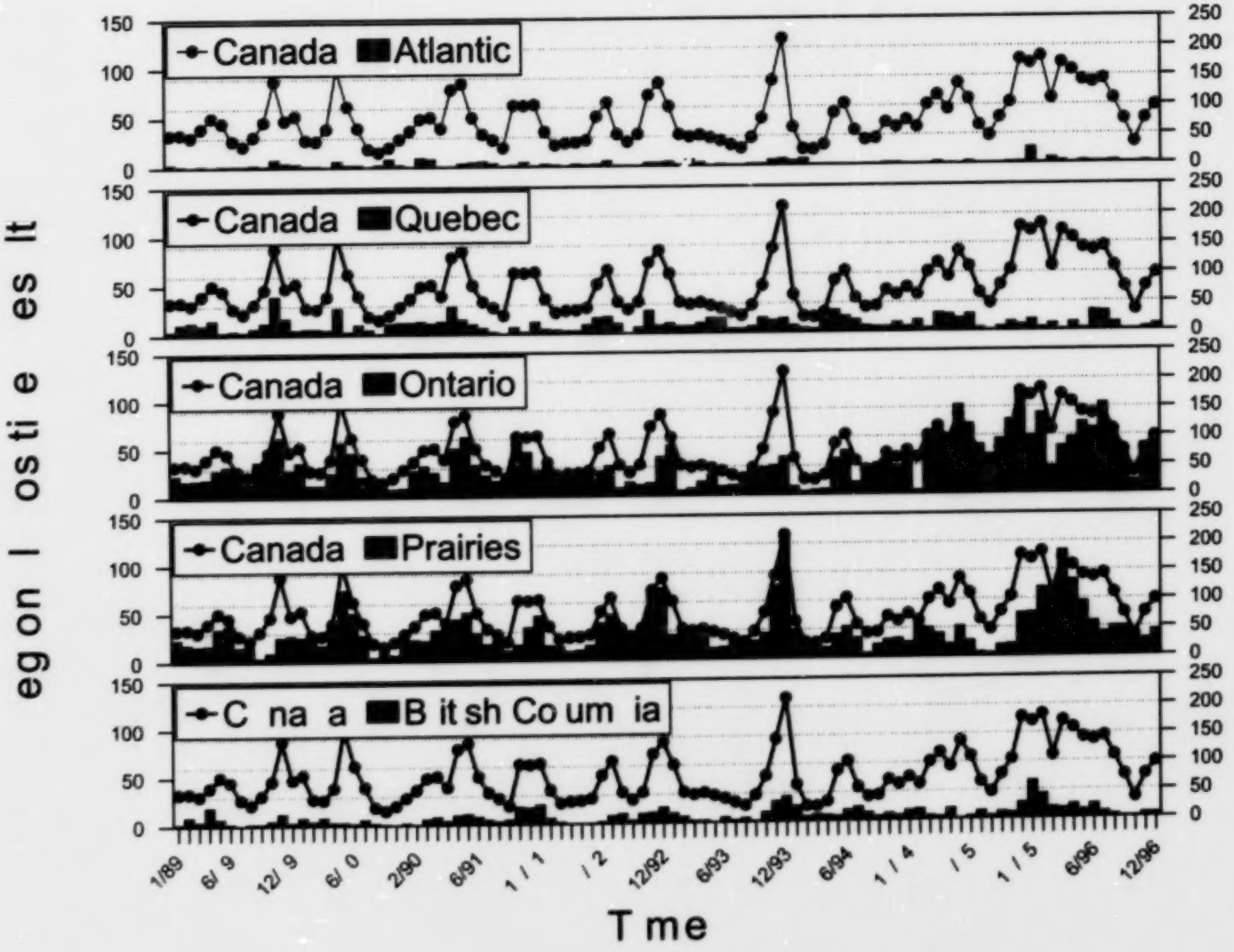


Figure 6

Respiratory Syncytial Virus in Canada by Region by Month

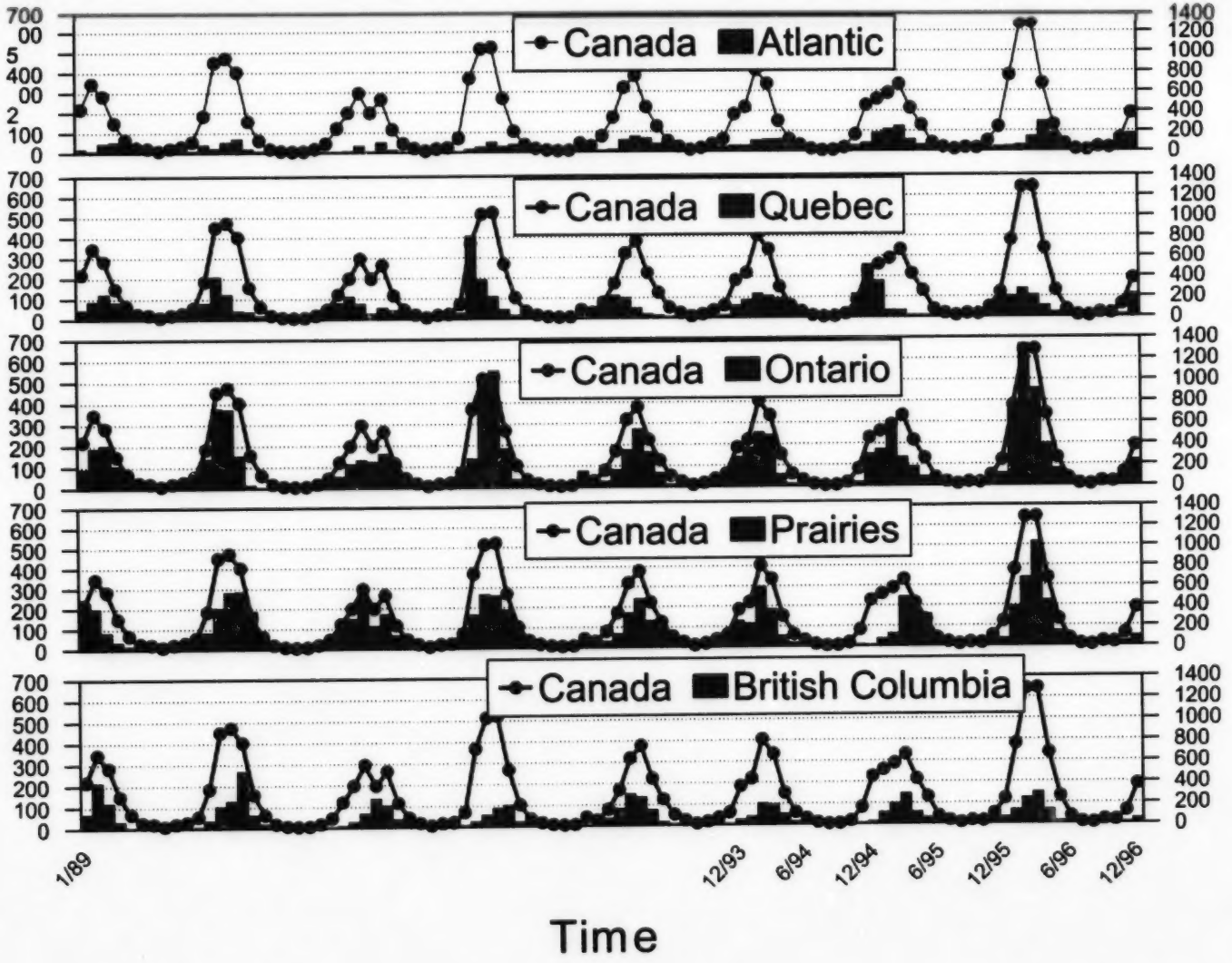


Figure 7

Respiratory Viruses in Canada by Region by Month

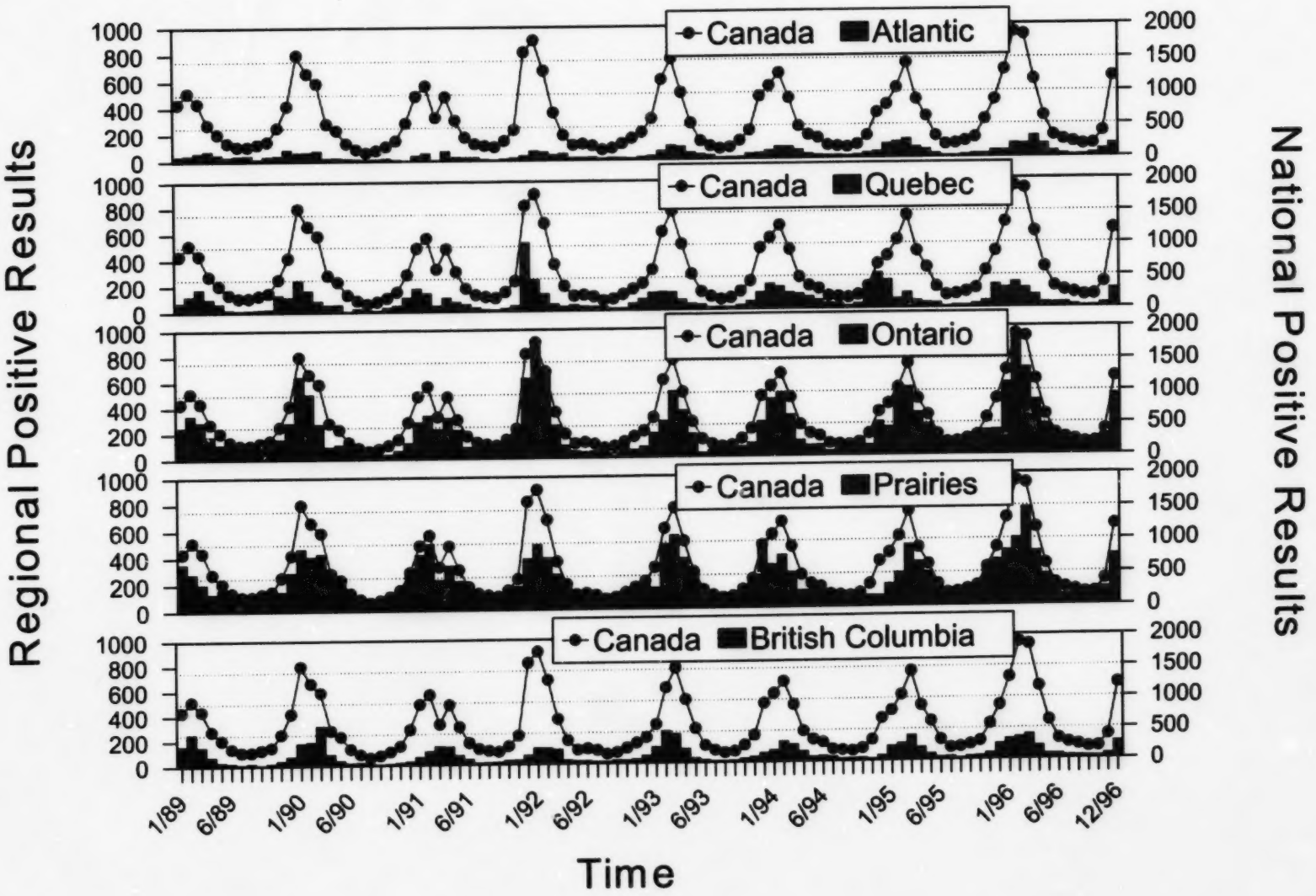


Figure 8

Hepatitis A Virus in Canada by Region by Month

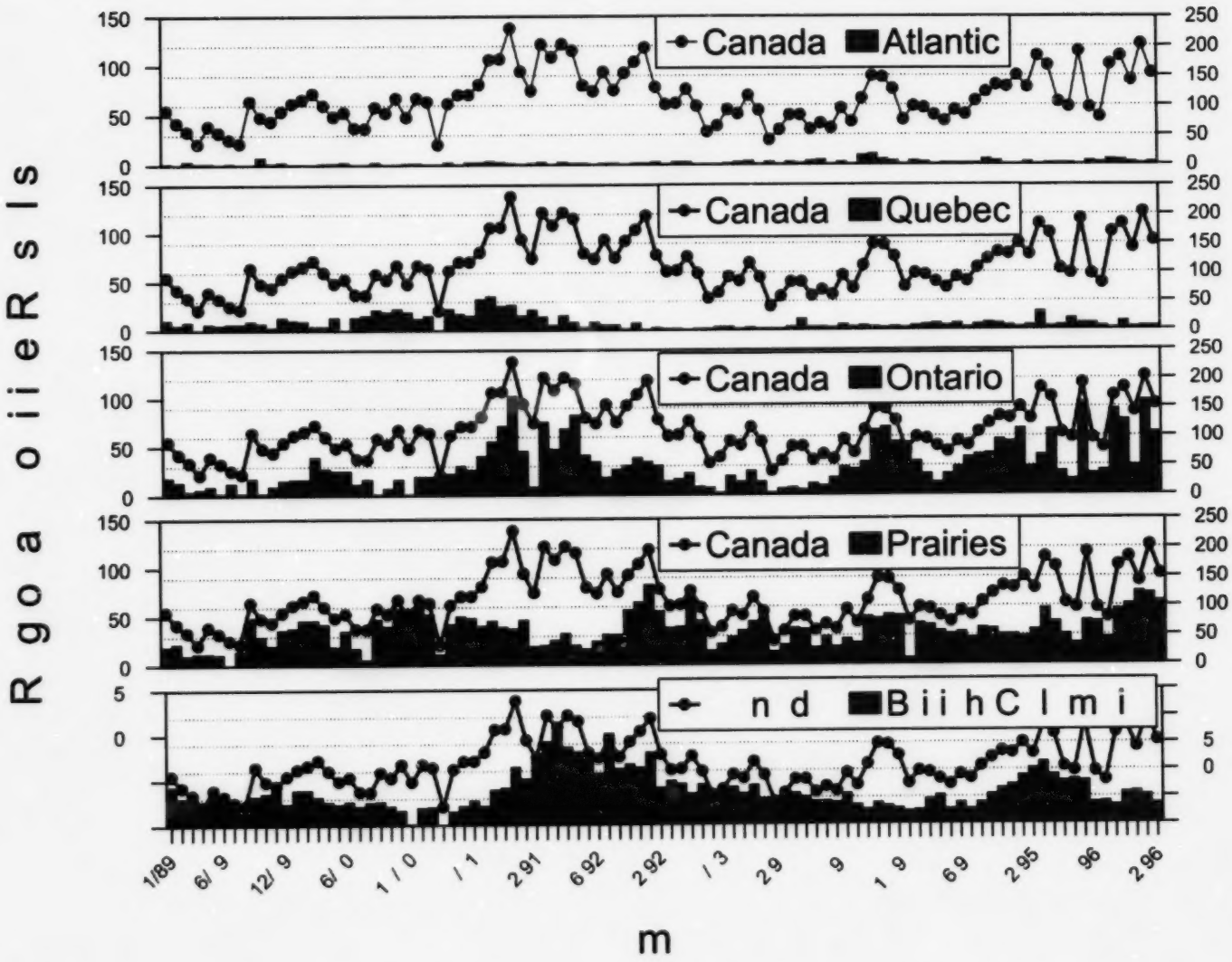


Figure 9

Coxsackie A and B Viruses in Canada by Region by Month

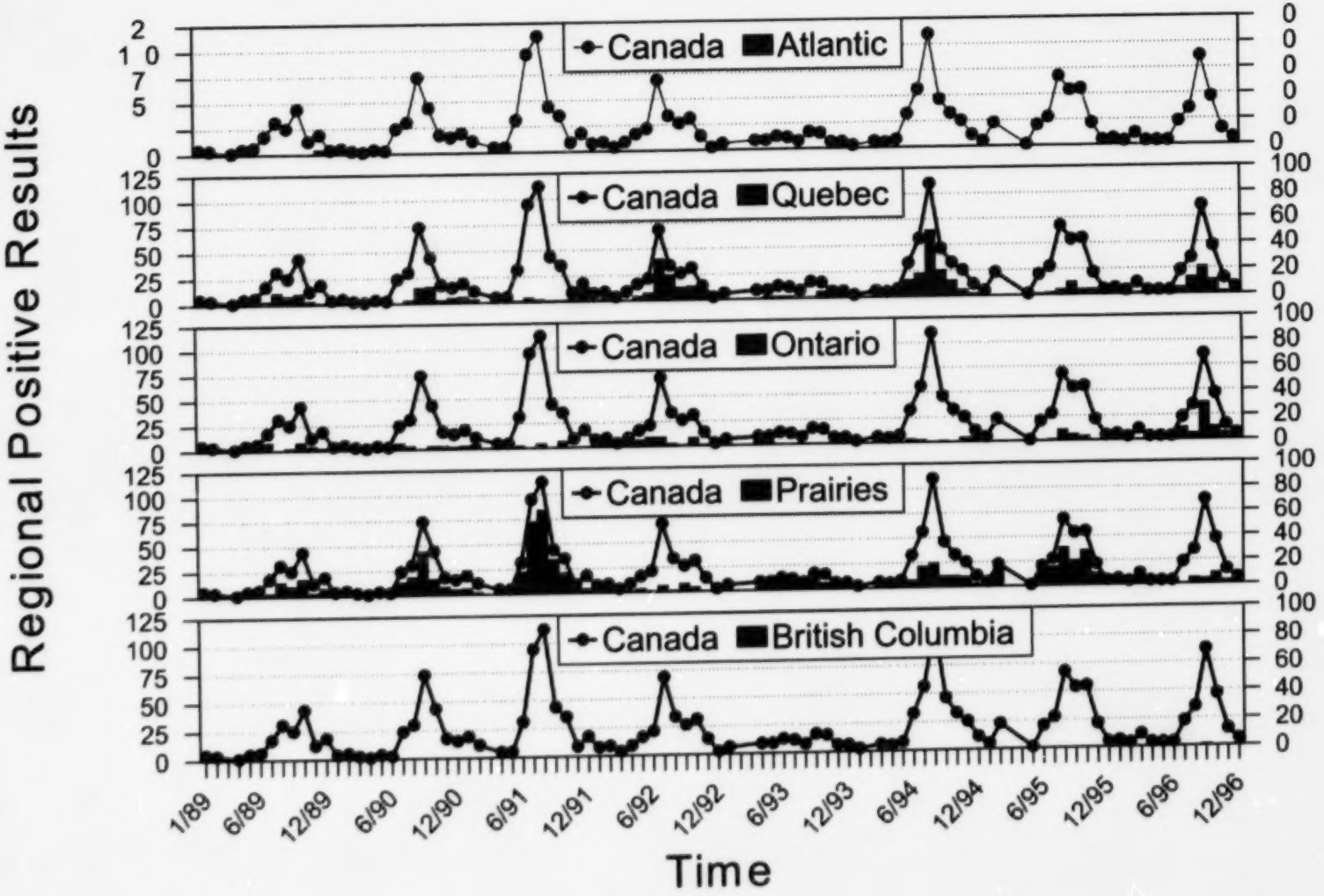


Figure 10

Echoviruses in Canada by Region by Month

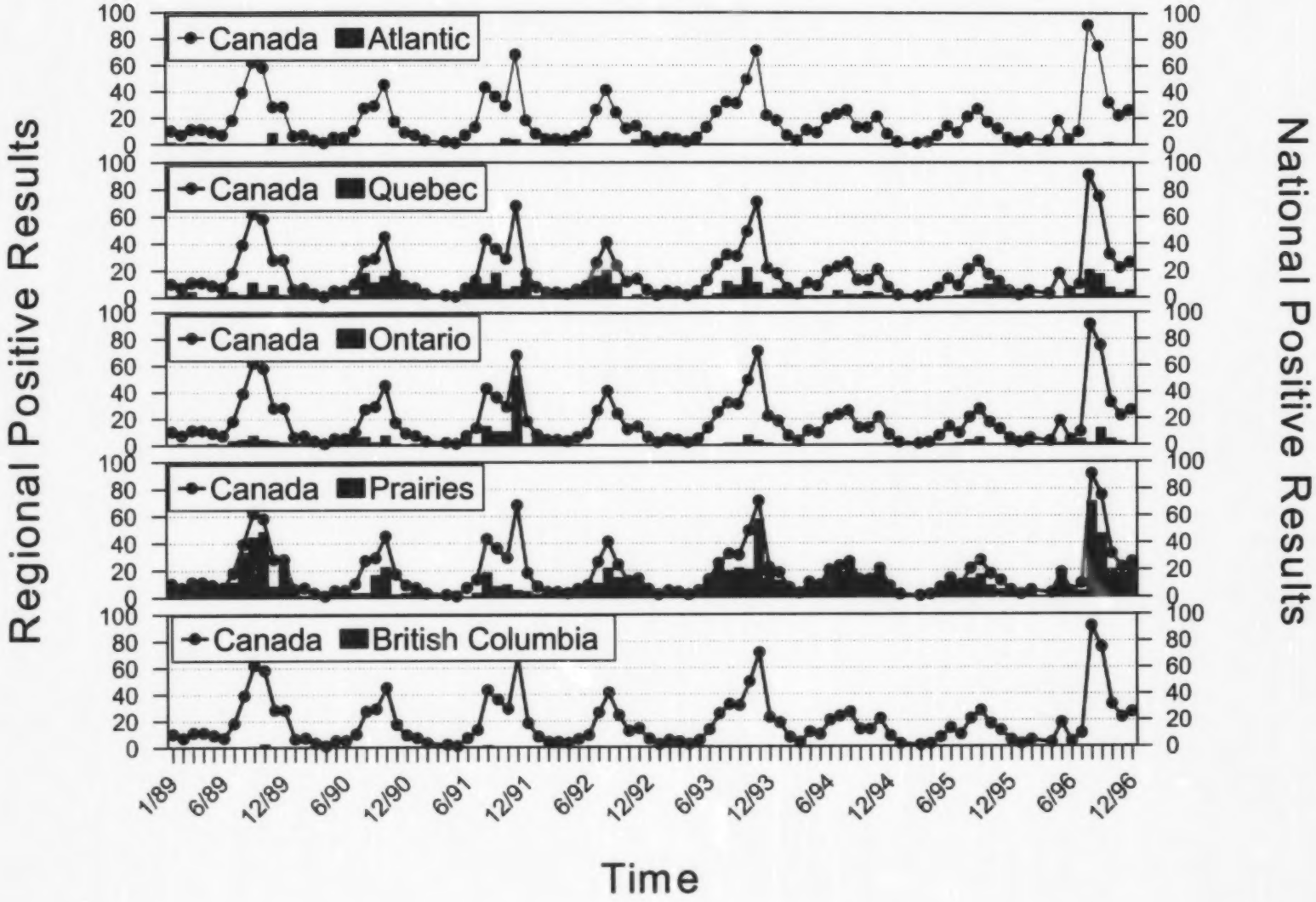


Figure 11

Rotavirus in Canada by Region by Month

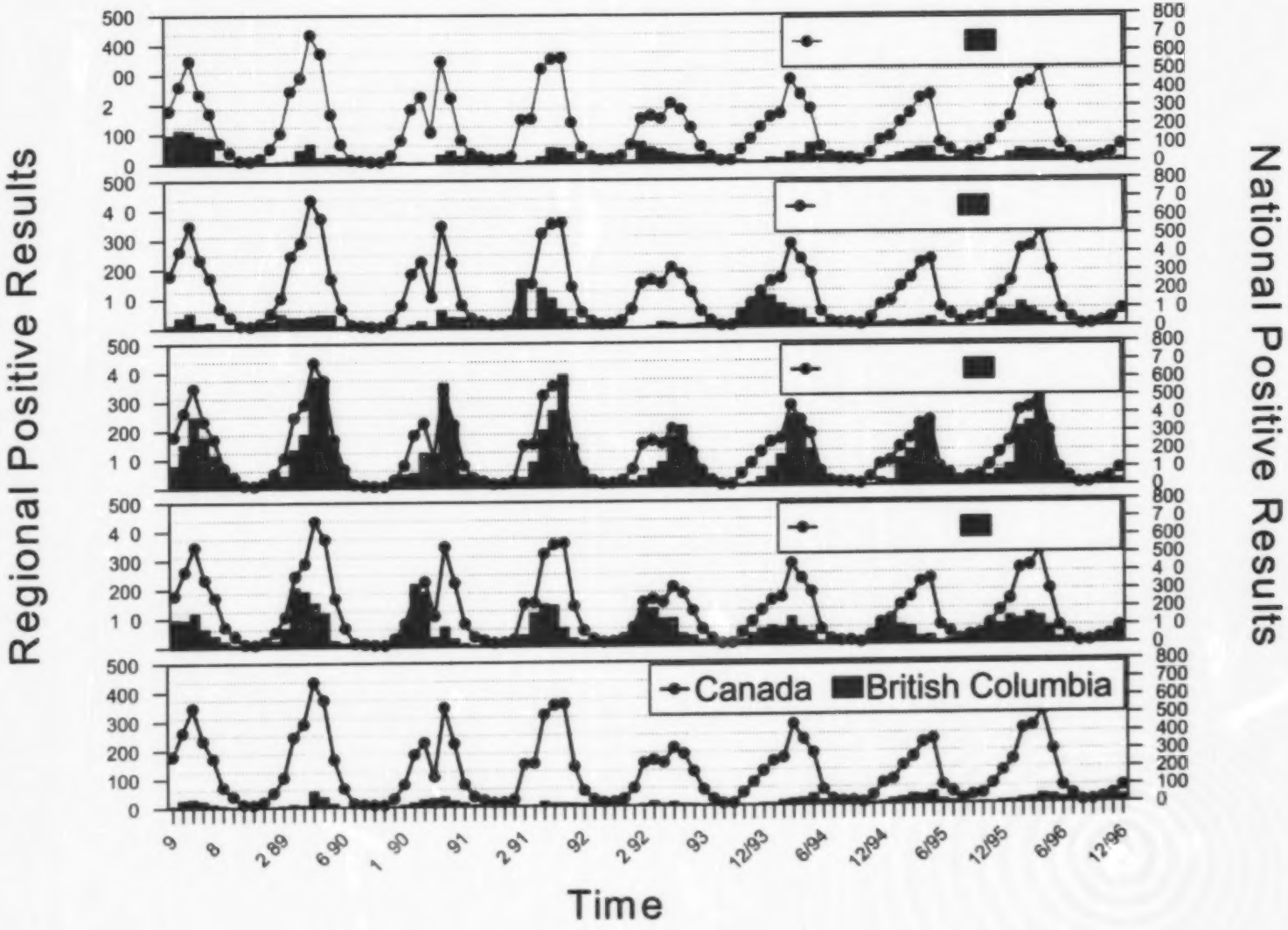
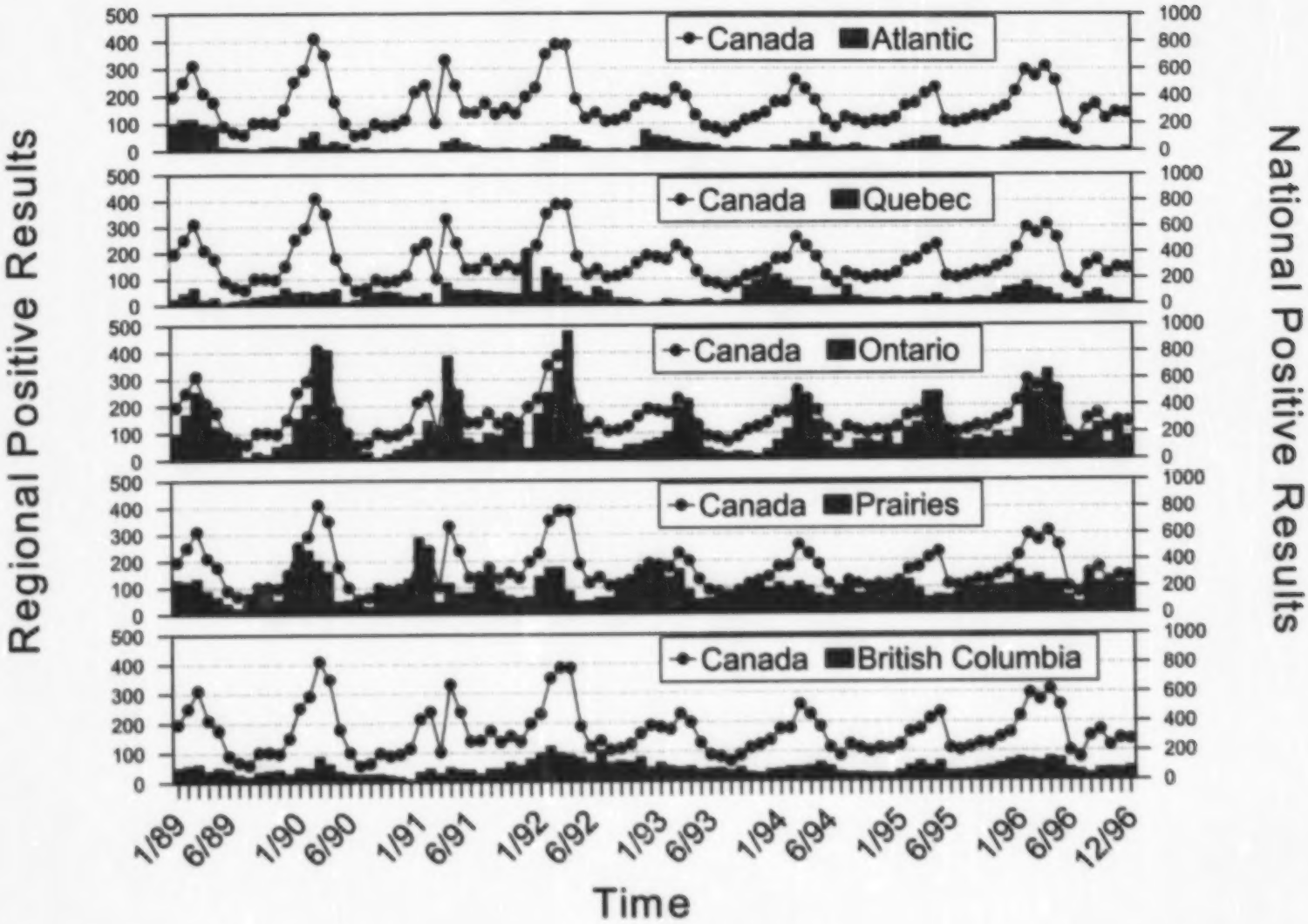


Figure 12

Enteroviruses in Canada by Region by Month



Discussion

The CVR is a laboratory-based surveillance system for infections caused by viruses and selected *Mycoplasma* and *Chlamydiae* agents of public health importance. Over 90 species, types and subtypes are reported each month by over 40 laboratories from all 10 provinces across Canada. Therefore, the system provides national data on trends of laboratory diagnosis of these infectious agents in different regions of the country over time. For many agents, this system is probably the only source of national data. Furthermore, since the reporting format is relatively straightforward and based on the records of participating laboratories, the data collected through the system should be fairly reliable.

However, it should be pointed out that trends demonstrated by the system may not always accurately reflect regional differences in incidence rates, since the effort that goes into laboratory disease diagnosis in response to new infections may vary on a per capita basis by region, time and agent. Analysis of reporting patterns for various agents over a number of years has indicated that new diagnostic techniques, availability of diagnostic services, awareness of the role an agent plays in disease, and real changes in the occurrence of a disease may influence the number of positive laboratory reports for a particular agent[1]. Recent availability and awareness of laboratory diagnostic technology for HCV, and diagnostic capability and special interest in rhinoviruses have likely been significant contributors to the increasing numbers of these agents being reported[4]. Nevertheless, the data from this system should provide relatively reliable estimates or indicators of year-to-year trends of the agents reported, especially if the number of reporting laboratories and the total number of specimens tested are also considered. For example, trends in infections with influenza virus revealed through the system were consistent with those derived from another surveillance system for respiratory viruses[8,10]. Certainly, data from both surveillance systems reflect only a proportion of the real incidence, as already stated, but a true reflection of the real incidence trends is often what can be expected.

Another example is measles virus infections. In 1986, the largest number of cases of laboratory-diagnosed measles since 1979 was reported and corresponded to a widespread resurgence of measles infection in Canada[1,11]. Moreover, the increased prominence of HIV-1 reports among positive laboratory diagnoses reported to LCDC in 1987 and 1988 corresponded to a similar increase in disease surveillance reports collected by the Canadian Federal Centre for AIDS[1,12].

Weber and Parker compared the number of laboratory reports and the number of cases reported for some viruses causing notifiable diseases[5]. For AIDS/HIV-1, hepatitis B and hepatitis C, there were many more positive laboratory tests for evidence of infection each year than there were notifiable cases. Presumably, this reflects repeated monitoring of patients by laboratory testing, duplicate reporting of positive findings for different detection methods (for example, Western blot and p24 antigen testing for the same HIV-1-infected patient) or delayed reporting of AIDS/HIV-1 infections. For other notifiable diseases, such as chickenpox/varicella-zoster, mumps, and measles, clinical diagnosis is generally reliable, and relatively fewer laboratory tests are performed for each case. Yet for other agents, such as hepatitis A and

rubella, the ratio of notified cases to laboratory reports is much lower, reflecting a strong reliance on laboratory confirmation for these agents. Last, laboratory detection of polioviruses is presumed to result largely from postvaccination investigations in which the virus is detected after vaccination with live oral polio vaccine, and does not necessarily imply notifiable cases of poliomyelitis.

Certain circumstances are more likely to make positive laboratory diagnoses a useful proxy for actual changes in the incidence of a disease agent. These conditions include the following: (a) significant illness exists such that medical help is sought by the patient, (b) the condition presents nonspecific symptoms such that the physician seeks laboratory diagnosis, (c) reliable laboratory technology exists and is available to diagnose the suspected agent and (d) specific treatment of the disease condition or control of the disease agent is warranted and dependent upon the identification or characteristics of the suspected agent[1]

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APPENDIX:
List of Laboratories Participating in the Canadian Virus Reporting System, 1989 to 1996

Public Health Laboratory (B.C. Centre for Disease Control) - Vancouver, BC
Diagnostic Virology and Reference Laboratory, UBC - Vancouver, BC
British Columbia Children's Hospital - Vancouver, BC
Public Health Laboratory - Edmonton (Northern AB)
Public Health Laboratory - Calgary (Southern AB)
Royal University Hospital - Saskatoon, SK
Public Health Laboratory - Regina, SK
Cadham Provincial Laboratory - Winnipeg, MB
Regional Public Health Laboratory - Thunder Bay, ON
Public Health Laboratory - Sault Ste. Marie, ON
Regional Public Health Laboratory - Timmins, ON
Regional Public Health Laboratory - Windsor, ON
Public Health Laboratory - London, ON
St. Joseph's Health Centre - London, ON
Public Health Laboratory - Hamilton, ON
St. Joseph's Hospital - Hamilton, ON
Public Health Laboratory - Orillia, ON
Regional Public Health Laboratory - Palmerston, ON
Hospital for Sick Children - Toronto, ON
Public Health Laboratory - Toronto, ON
Toronto Medical Laboratories (The Toronto Hospital) - Toronto, ON
University of Toronto - Toronto, ON
Wellesley Hospital - Toronto, ON
Women's College Hospital - Toronto, ON
Public Health Laboratory - Peterborough, ON
Regional Public Health Laboratory - Kingston, ON
Children's Hospital for Eastern Ontario - Ottawa, ON
Regional Public Health Laboratory - Ottawa, ON
Hôpital général de Montréal - Montréal, PQ
Hôpital Ste-Justine - Montréal, PQ
Montreal Children's Hospital - Montréal, PQ
Royal Victoria Hospital - Montréal, PQ
Centre hospitalier universitaire - Sherbrooke, PQ
Laboratoire régional de virologie de l'Université Laval - Ste-Foy, PQ
Centre hospitalier St-Joseph - Trois-Rivières, PQ
Chaleur Regional Hospital - Bathurst, NB
Hôpital régional de Campbellton - Campbellton, NB
Hôpital régional d'Edmunston - Edmunston, NB
Dr. Everett Chalmers Hospital - Fredericton, NB
Hôpital Georges L. Dumont - Moncton, NB
The Moncton Hospital - Moncton, NB
St. John's Regional Hospital - Saint John, NB
Queen Elizabeth Hospital - Charlottetown, PEI
Queen Elizabeth II Health Sciences Centre - Halifax, NS
Public Health Laboratory - St. John's, NF

45 laboratories